Looking for the Aryans

R. S. Sharma

Cameos in history and culture – 1

Looking for the Aryans

R. S. Sharma

Cameos in history and culture – 1

Cameos in History and Culture - 1

Looking for the Aryans

R.S. Sharma

Pariksit Memorial Lecture
Sri Rama Varma Government Sanskrit College
Tripunithura, Kerala

Orient BlackSwan

Orient Blackswan Private Limited

Registered Office
3-6-752 Himayatnagar, Hyderabad 500 029 (A.P.), INDIA
e-mail: info@orientblackswan.com

Other Offices
Bangalore, Bhopal, Bhubaneshwar, Chennai,
Ernakulam, Guwahati, Hyderabad, Jaipur, Kolkata,
Lucknow, Mumbai, New Delhi, Noida, Patna

First Published 1995
Reprinted 1996

eISBN 978 81 250 5313 2

e-edition:First Published 2014

ePUB Conversion: Techastra Solutions Pvt. Ltd.

Preface

The archaeological approach to the Aryan problem, which was stressed by Gordon Childe in his book, *The Aryans*, in 1926, has received considerable attention in recent years. Archaeology and other disciplines have been used to formulate more than a dozen theories regarding the original home of the Indo-Europeans and to suggest several views regarding the routes taken by them. This book, however, is mainly concerned with the cultural dimension of the problem. It identifies and analyses the important markers of the Aryan culture and discusses the 'when' and 'where' of these markers. It deals with the use of the horse and the spoked wheel, cremation, the fire and *soma* cults, animal sacrifice, especially horse sacrifice/the mode of subsistence, and male dominance. It provides specimens of the Aryan language found in Indo-European inscriptions from West Asia and Greece. It would make me happy if this study helps sustain the renewed interest that has appeared in the Aryan question.

This little book is an expanded version of the Pariksit Memorial Lecture I gave in December 1993 at the Raja Sri Rama Varma Government Sanskrit College, Tripunithura, in Kerala. I thank Professor K.G. Paulose, the Principal of the college, who invited me to deliver the lecture. I also thank Mr Mrityunjaya Kumar of Delhi University and Dr P.N. Sahay of the Indian Council of Historical Research Library. Both of them sent me photocopied material which I used to prepare this book.

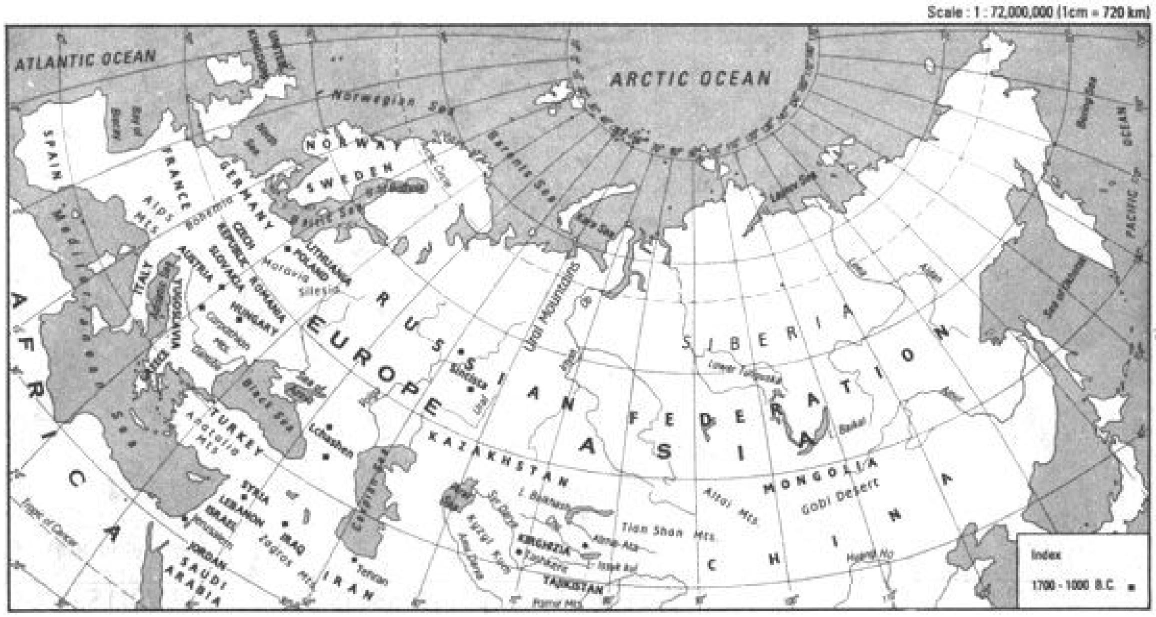
R.S. Sharma

Patna
7 November 1994

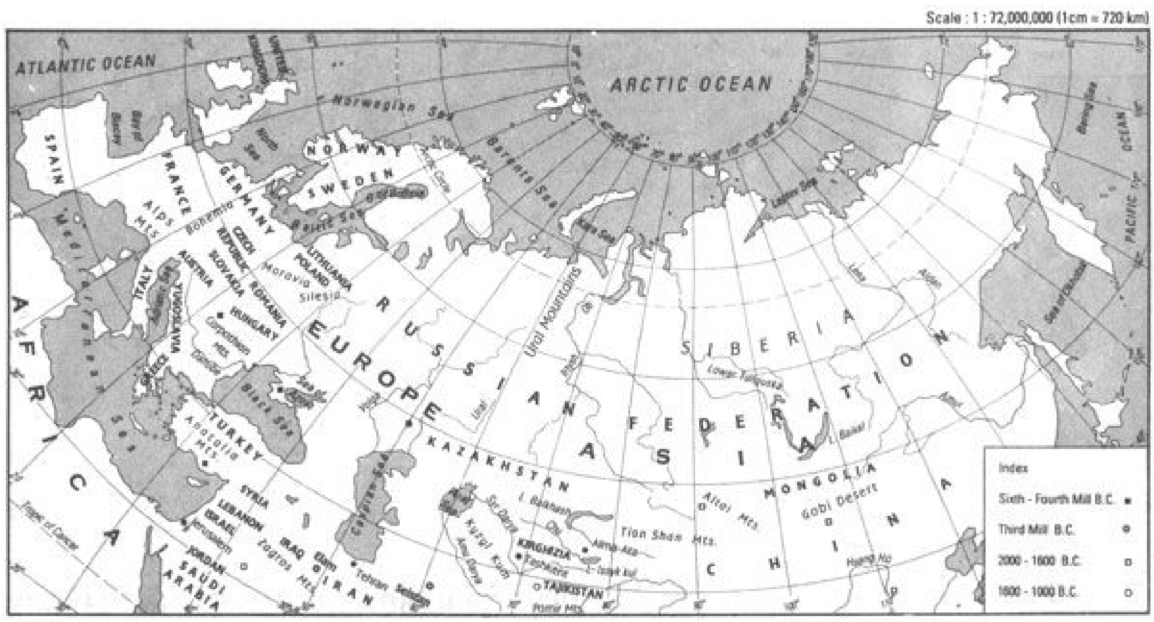
Contents

Bibliography

SPOKED WHEEL SITES IN NORTH EURASIA



DOMESTICATED HORSE SITES IN NORTH EURASIA



1 Introduction

The Concept of Ārya

Towards the end of the eighteenth century when William Jones discovered that Sanskrit was similar to Greek, Latin and other European languages, it was postulated that the Aryans lived in an area either in Central Asia or eastern Europe. They were supposed to have descended from the same racial stock. This concept prevailed in the nineteenth century and was used as a powerful political weapon in Nazi Germany during the anti-Jewish campaign launched by Hitler. After 1933 it was declared that the German people constituted a pure Aryan race. In the Nazi view, they occupied the highest place among the Aryans and hence were entitled to hegemony over the world. But scholars who have studied the Aryan problem deeply have come to the conclusion that those speaking the same language need not necessarily belong to the same racial or ethnic stock. Most scholars now think in terms of a Proto-Indo-European language rather than one single race.

In the discussion of the Indo-European problem, several terms are used. The Indo-Europeans are called Aryans although the term '*ārya*' is found mainly in the eastern Indo-European languages. This term may indicate the culture shared by the *Avesta* and the *Ṛg Veda*. The two terms 'Indo-Iranian' and 'Indo-Aryan' are frequently employed. The term 'Indo-Iranian' is used to signify the undifferentiated language which was spoken by the Aryans comprising the Indians and Iranians before their separation. Moreover, 'Indo-Iranian' is taken to mean the joint community of the Indian and Iranian Aryans. Additionally, 'Indo-Iranian' is considered a language only of Iran, to which its speakers belong. However, we use this term in a wider sense which also includes the Indie speech and people. The term 'Indo-Aryan' means the speech and its speakers who appear in India; sometimes, the term 'Proto-Indian' is used to denote the same. There is some confusion about the use of the words 'Iranian' and 'Indie'. The first indicates the Aryans who came to Iran, and die second, Sanskrit and its speakers who came to India. Additionally, the term 'Proto-Indo-Aryan' is used to signify the Indo-European language that appears in Kassite and Mitanni inscriptions. Another term, 'Proto-Indo-Iranian', is also used to indicate the language that was spoken by both the Indians and the Europeans when they are thought to have lived together. The term 'Proto-Indo-European' indicates the language reconstructed on the basis of cognate words found in the Indo-European languages.[1]

The term *ārya* appears in several Indo-European languages but not in most of them. O. Szemerenyi has studied all the arguments relating to the term *ārya* and has come to the conclusion that this term is not Indo-European but a Near Eastern, probably Ugaritic, loan word meaning 'kinsman', or 'companion'.[2] However, the term *ārya* is found in ancient texts belonging to the eastern branch of the ancient Indo-European languages. It occurs in both the *Ṛg Veda* and the *Avesta*. The term Iran itself is connected with the term *ārya*. Since Afghanistan was occupied by the Indo-Aryans and the Iranian Aryans for some time, a part of this country came to be known as 'Araiya' or 'Haraiva'. In the sixth century BC. King Darius of Persia called himself an Aryan. In the *Ṛg Veda*, the term *ārya* connotes a cultural community. Speakers of both the Indo-Aryan and the Indo-Iranian languages are called Aryans. The

Avesta mentions the country of the Aryans where Zoroastrianism began. This might indicate the 'Aria' or 'Ariana' mentioned by classical writers. It covered a large area including Afghanistan and a part of Persia and Media. It also included parts of Bactria and Sogdia to its north. Megasthenes speaks of 'Arianois' as one of the three peoples inhabiting the countries adjacent to India.[3] The term *ārya* also occurs in the Hittite language in which it signifies 'kinsmen' or 'friend'. Some scholars also link the name of Ireland with the term *ārya*. A word cognate to *ārya* occurs in German as well, but not in any other west Indo-European language.

In Indo-European society, those who possessed horses and chariots enjoyed social hegemony, but it would be incorrect to infer that in all situations, die term *ārya* means 'master' or 'person of aristocratic class'. In the Finnish language, the term *'orja'* means slave, and it is derived from the word *ārya*. It appears that when the people of Finland subjugated their neighbours comprising the Indo-Europeans or the Aryans, they used the term *orja* in their own language to denote a slave.[4]

In the *Ṛg Veda*, the worshippers of Indra were called *ārya*. When this text speaks of the struggle between the Aryans on the one hand and the *dāsas* and the *dasyus* on the other, it does not consider the former to be indigenous and the latter to be foreigners. The struggle takes place between two cultures, one observing the *vrata* and the other violating it. At that stage there is no perception of India as a country or a nation, and therefore the labels of Indigenous' and foreigner do not arise. Indications of struggles between cultures and patterns of life appear in both the Indian subcontinent and in Iran. The *Gatha* portion of the *Avesta* shows that in Iran the struggle went on between those who followed Zoroaster and those who opposed his teachings.

If the colour of the skin is regarded as a test of identity, some hymns of the *Ṛg Veda* show the Aryans to be a separate community. Their enemies are described as black-skinned. The Aryans are called *mānuṣī prajā,* who worshipped Agni Vaiśvānara and who sometimes set fire to the houses of black-skinned people.[5] It is stated that the Aryan god Soma killed black people.[6] It is also stated that he fought the *rakṣasas* who had black skin[7] and that he killed 50,000 *kṛṣṇas* or blacks. He is believed to have removed the black skin of the asura.[8] In such references the Aryans and their enemies are identified by the colour of their skin. But Bailey argues that all the references to the term *ārya* in the *Ṛg Veda* cannot be taken in the sense of race or caste. This term is derived from the root *ar*, which means 'to obtain'.[9] The term *ārya* means master of a person of noble birth in the *Avesta*, and this meaning suits several references in the *Ṛg Veda*. Therefore, those leaders of the Vedic tribes who are lauded in the *Ṛg Veda* under the appellate of *ārya* were either prosperous or high-born. Clearly, in the cattle rearing society, they owed their prosperity to cattle wealth which could be better accumulated and preserved by the horse-based aristocracy.

The *Ṛg Veda* shows the existence of some ethnically mixed groups. Ten kings or tribal chiefs took part in the famous Battle of the Ten Kings. But in this battle Aryan chiefs were not arrayed against non-Aryan chiefs. The names show that each warring party consisted of both Aryans and non-Aryans. Later, those who were honoured and high ranking or were (of high birth came to be called Aryans. In later Vedic and post-Vedic times, the term *ārya* came to cover people of the three higher *varnas* who were also called '*dvija*'. The sudras were never placed in the rank of the Aryans. The Aryans were considered to be free. The sudras on the other hand, were not free. According to Kautitya, the *āryaprāṇa* sudra could not be reduced to the status of a *dāsa* because the element of *āryatvam* or 'aryadom' was inherent in him. *Āryatvam*, therefore, indicated a kind of civic freedom. It meant that

sudras who were born of Aryan parents were considered free. Their number was not large until Gupta times, but even in subsequent times when they did gain in strength numerically, they continued to be regarded as non-Aryans by the brahmanas and other members of higher orders.

Reconstruction of the Early Material Culture

The Proto-Indo-European language is reconstructed on the basis of similarities between its daughter languages and from this model language inferences can be drawn regarding a Proto-Indo-European culture. The common words signify the type of climate, landscape, animals and birds with which the speakers of die Proto-Indo-European language were familiar, and also indicate the type of their settlements, social organisation, rituals and technology. On the basis of common words, Emile Benveniste has explained the genesis, evolution and even transformation of the social institutions of the Indo-Europeans.[10] But the method of arriving at an undifferentiated Proto-Indo-European language and deriving a Proto-Indo-European culture from it, is criticised by some, including the British archaeologist, Colin Renfrew.[11] It is argued that words change their meanings in course of time and those from non-Indo-European languages could have been adopted in the 'Proto-Indo-European language'. But these criticisms are countered effectively. Linguistics can differentiate between the changing meaning of words and identify those borrowed from other languages. Whether the significations attached to the cognate terms differed from time to time and place to place requires consideration. But so far, alternative meanings have not been assigned to Proto-Indo-European terms. Therefore, meanings of these terms known in later times are used to explain their import in early times in the same way as modern survivals of ancient rites and customs are used to bring out their significance in ancient times. Further, linguistic reconstruction is based not only on individual words but on a cluster of linked words such as in the case of wheel-related terms. Finally, if phonology, morphology and syntax are found to be similar, it is a definite indication of real affinity. In such a case, linguistic similarities cannot be attributed to the convergence of different speeches.

Therefore, it is legitimate to pick up the common words found in daughter languages and reconstruct the original language on their basis. In the Romance languages including French, Italian and Spanish, important common words have been identified and the Vulgar Latin language has been reconstructed on their basis. When compared with the Latin found in early texts, this method of reconstruction has been fully vindicated. However, it would not be possible to infer all aspects of life including forms of government and the character of the people from such reconstructions either in the case of the Latin-speaking people or in the case of the Proto-Indo-European speaking people. In the latter case, the reconstruction of terms for ecology and production economy is especially important so that the linguistic evidence may be checked with the evidence regarding material culture, now available in good measure. Further, the study of the Proto-Indo-European culture should be based not only on the study of cognate words, but should also cover the common elements of culture shared by the earliest Indo-European texts comprising the *Ṛg Veda,* the *Avesta* and the works of Homer.

The reconstruction of the original Indo-European culture and the climate and environment, however, does present certain difficulties. Words for 'tree' which are common to both the eastern and western branches of the Indo-European language number only half a dozen, the most important of which is the one for birch. The number of words for animals is also limited. A problem that remains is how these deficiencies may be made up.

The cognate words and early Indo-European texts attest the presence of a temperate climates pastoral

and farming activities together with the use of metals, the use of the horse to draw chariots and to mount, male dominance, post-cremation burial, the cults of fire and *soma,* animal sacrifice including horse sacrifice and above all, a common language. These elements are broadly shared by the Vedic and the Avestan texts and many of them appear in early Indo-European texts.

To project the elements of culture found in Greece, Iran and India between the fifteenth and eighth centuries BC to pre-fifteenth century BC times does not appear to be a sound method. But basically, the *Ṛg Veda,* the *Avesta* and Homer's works belong to an age when mainly copper seems to have been in use. Although the later portions of Homer's texts refer to iron, in general, ancient texts lay stress upon pastoralism-cum-agriculture which obtained in eastern Europe, western Asia, Central Asia and north-west India in the Eneolithic and Bronze Ages. However, the Bronze Age associated with the ancient Indo-European texts was not so advanced as the one in the Cretan, Mesopotamian and Harappan cultures. The former lacked cities, class-divided societies and full-fledged state systems. Iron does not seem to have been in effective use until 1000 BC.

The geographical area in which scholars look for the archaeological counterparts of the elements mentioned above comprises eastern Europe and Central Asia. This area is more or less in continuation with the areas of India, Afghanistan, Iran, Iraq, Anatolia and Greece. Since early times it has been inhabited by various communities who speak Indo-European languages. Further, it suits the climate, flora and fauna as revealed by the common terms. The method of looking for the elements of the Indo-European culture in the pre-1500 BC archaeology of eastern Europe and Central Asia seems to be sound and logical.

In tracing the various elements of the Indo-European culture, the possibility of exchange between it and the sedentary cultures of the Indian subcontinent, western Asia and even China cannot be ruled out. Markers of the Indo-European culture can also be found individually in other parts of the world. But we should consider the areas where they emerge in clusters and grow into cohesive cultural entities. The temperate region of eastern Europe and Central Asia in which copper, the horse and other elements appear is fairly large, and the traits of the Indo-European culture do not unfold themselves simultaneously in its different subregions. Therefore, the causes and stages of expansion together with the location of intermediate halts need to be investigated. This exercise must, however, await further research. Here, we mainly consider the 'when' and 'where' of the cultural markers.

In exploring the time and place of the early Indo-European groups we have omitted ancient mythologies and folklore current among the Indo-European communities. Our main effort has been to see whether the traits of culture detected in cognate words and ancient texts of the Indo-European language can be attested archaeologically.

Indo-European archaeology is a little obsessed with pottery. Grey pottery is associated with the Indo-Iranians and Painted Grey Ware (PGW) with the Aryans in India. Grey Ware is found in south Central Asia, Iran, Afghanistan and Baluchistan from 3000 BC onwards or even earlier.[12] This ware is associated with the Neolithic cultures which generally appear in the Indian subcontinent not earlier than 3000 BC except at Mehargarh in Baluchistan. It is possible that when the Indo-Iranian groups appeared in south Central Asia and its neighbourhood, they adopted this ware and retained it even when they crossed the Hindukush and settled down in Pakistan, Punjab, Haryana, western Uttar Pradesh and Rajasthan.

Four or more types of pottery including Black and Red Ware, Black-Slipped Ware, Grey Ware and Painted Grey Ware are associated with the Aryans in India in the second millennium BC. In Europe

similarly, the users of four types of pottery between 5000 BC and 2500 BC. are considered to have been Ìndo-Europeans.[13] However, pottery alone can neither determine the original home of the Iiido-Europeans nor their settlements.

Archaeological evidence about the Indo-Europeans is drawn primarily from the excavation of cemeteries as is the case with the Megalithic people in India. In prehistoric Europe and Central Asia, very few settlement sites are attributed to the Indo-Europeans. The situation is especially fraught with difficulties in the Indian subcontinent, for though the earliest Indo-Europeans practised burials, the discovery of their graves in the subcontinent is confined to the Swat valley.

2 *The Problem of the Horse*

Textual References

The horse plays a crucial role in the life of the Indo-Europeans and is, therefore, regarded as an important indicator of their presence. The term '*aśva*' and its cognates are found in Sanskrit, the Avestan language, Latin, Greek and other Indo-European languages. In ancient Indo-European texts many personal names are horse-centred. This is particularly true of the Vedic and Avestan texts. "For the Vedic period before 1000 (BC) we have over 50 horse names" and thirty chariot names.[1] Some tribes of Iran mentioned by Herodotus are named after the horse and even the Kassites, who invaded Babylonia in the seventeenth century BC, appear to have a horse-based tribal name. In its various forms the term *aśva* is mentioned 215 times in the *Ṛg Veda*, while the term *go* is similarly mentioned 176 times. The horse is praised in two complete hymns of the *Ṛg Veda*[2] and its importance is evident from many other references.[3] The Aśvins are two horse-riders who occupy high positions in the Vedic pantheon. Almost all the Vedic gods are associated with the horse, and this is particularly true of India and his fighting companions, the Maruts. The horse symbolises strength and is generally employed as a metaphor for might. The Vedic people prayed for horses in addition to *prafā* and *paśu*; sometimes they asked for a thousand horses.

The horse and the horse-drawn chariot are equally important in the works of Homer.[4] Equerry or the person in charge of the horse of the chief is a common term in the *Odyssey*.[5] In the *Zend Avesta*, cattle wealth seems to be more important, but the general importance of the horse or '*aspa*' cannot be minimised. Both the horse and chariot are repeatedly mentioned in prayers made to Mithra.[6] Several other divinities are intimately associated with the horse. The sun is always described as swift-horsed or one possessing swift horses.[7] At a much later date, the seven-horsed chariot of the sun became widely known in Indian iconography The adjective 'swift-horsed' is also applied in the Avesta to another divinity called Apām-Napāt,[8] who is also a Vedic deity. Zoroaster, blessing the young king Vistaspa, asks that he be rich in horses and prays to the divinities to bestow on him, swift horses and good strong sons.[9] Significantly enough, as in the name of Vistaspa, *aspa* or horse, forms a part of the names of several other chiefs or warriors such as Pourusaspa (the father of Zoroaster), Karesaspa, Gushtaspa and Gamaspa.[10] The horse was such an integral part of the Me of the ruling segment in Iran that the penalty for offences, religious or non-religious, was administered with a horse goad (*asphe-astra*) or stripe.[11] Though references to the horse are few in the *Gatha*, which is considered to be the earliest portion of the *Avesta*, only a few fragments constitute this portion of the larger text which itself is incomplete.[12] There is no doubt that as a whole, the *Avesta* is familiar with the horse in general[13] and also with the chariot horse[14] and the saddle horse[15] in particular. Therefore, literary texts leave no doubt that the horse played a significant role in the area from south Central Asia and Iran to the north-western part of the Indian subcontinent around the second millennium BC.

Absence of the Domesticated Horse in India before c. 2000 BC

There is no clear evidence of the presence of the horse in the Indian subcontinent before 2000 BC. Its domesticated variety is reported from Bagor in Rajasthan around 4500 BC.[16] However, the lists of animals from Bagor appearing in standard texts do not mention the horse.[17] The horse is known in the Neolithic complex of Mahagara in the Vindhya ranges. But it is called "an isolated species of horse distinct from the one inhabiting areas in the USSR, Iran, Afghanistan etc. and associated with the Aryans".[18] Further, radiocarbon dates from the complex range between 5000 BC and 1500 BC. Thus this enigma needs to be explained. The horse is reported from Rana Ghundai in Baluchistan,[19] and is attributed to the third millennium BC, though on examination it has been found to be an onager.[20] Significantly enough, several animals appear on Harappan seals and also in terracotta figures, but the horse is absent On the other hand, while the bull is depicted very frequently,[21] the elephant occupies second position. It appears that the bull was worshipped in the pre-Vedic cultures; those with humps are depicted in painted motifs of the Indus valley civilisation.[22] However, terracotta figures of the bull are found in large number in the Chalcolithic sites of Baluchistan.[23] The bull, which occupies an important place in the *Rg Veda*, may have derived its divine character from the contact of the Vedic people with the Harappans. In any case, terracotta figures of the horse do not occur at any Harappan site, except perhaps Lothal[24] where the figure does not belong to the mature Harappan culture.

Earliest Domestication Between the Dnieper and the Volga

Domesticated horses are found over a vast area extending from eastern Europe to Central Asia even before 2000 BC. though this is not the case with the ass. However, horses are found in larger numbers in the steppe areas and very few are found in south-eastern Europe or in the Balkans. They do not appear in Greece until 2000 BC. Remains of the horse belonging to the fourth millennium BC are found at some sites in the Balkan peninsula. This maybe due to its contacts with the horse area of the Black Sea; the horse also appears in Anatolia. Some bones of what were considered horses have been found in central and northern Europe and seem very old, but they appear to be the bones of other (wild) animals.

It is significant that the largest number of horses appear in the area circumscribed by the Dnieper river in the west and the Volga river in the east. The horse first appears in the south Ural region around 6000 BC.[25] According to Marija Gimbutas, the sheep herders of the Volga steppe were probably "the first to domesticate the horse"[26] although its remains are also reported in the Black Sea area around 6000 BC. By the third millennium BC. horses appear in large numbers in south Siberia, but the original home of the domesticated horse seems to lie in the area between the Black Sea and the south Ural in Proto-Indo-European times.

Anatolia, which lies in the western part of West Asia reveals the presence of the horse in the fourth millennium BC due to its proximity to the Black Sea. Though there is an ideogram for horse in the Elamite script in south-eastern Iran in the beginning of the third millennium BC and also in the Sumerian script in 2500 BC.[27] this animal does not play any important role in the life of western Asia in the fourth and third millennia BC. However, it seems to have been known in Iran at Stalk III[28] and in Mundigak[29] in southern Afghanistan. Evidently the use of the horse underwent a long gestation period. Although it was known around 6000 BC. it came into general use only around 2000 BC.

Linguistic References to Chariots

The Indo-Europeans are distinguished by horse-drawn chariots which are amply attested to by Vedic, Avestan and Homeric texts. The chariot race prescribed in the *vājapeya* sacrifice of the later Vedic texts was also a Greek practice,[30] and is fully described by Homer.[31] It is held that the chariot originated in western Asia in the fourth millennium BC. reaching the steppes of south Russia in the same millennium. This might be proved true because the chariot does not appear in the steppes until 3000 BC or so. However, it is significant that the Proto-Indo-Europeans were very well acquainted with the wheeled wagon. There are two words for chariot in the Proto-Indo-European languages, and each one is used in about half á dozen Indo-European languages. This also applies to the different parts of the chariot. The terms axle, harness and navel (nave) have cognate words in six Indo-European languages. We also have a verbal expression for chariot riding in many Indo-European languages.[32] Another cognate verbal expression in Hittite and Sanskrit connotes the yoking of the chariot There are two separate words for wheel/wagon in the Proto-Indo-European language.[33] Though one of them may have been adopted by the Indo-Europeans from the Near East through trade and other contacts, it was made such an integral part of steppe life that it appears in several Indo-European languages.

Archaeological Traces of Wheels and Spokes

Sufficient evidence for the presence of the chariot from 3000 BC onwards appears in the excavations of south Russia. Chariots with two or four wheels belonging to the third millennium BC have been found, but until 2000 BC most of these wheels were solidly built. Therefore, as long as the speakers of Indo-European languages lived together they were not familiar with spokes. They learned of spokes after the process of dispersal and.differentiation began. A cemetery dated to about 1700 to 1600 BC found on the Sintashta river in south Ural reveals remains of light war chariots with ten spokes on each wheel, and the remains of their horses are found in five graves.[34] Spoked wheels appeared in eastern Europe around 1500 BC. At Lchashen, situated between the Black and the Caspian Seas, barrows from *c*. 1500 BC contain two wheeled chariots and each wheel has 28 spokes though until 1400 BC. the wheels of western Asia generally had only four spokes.[35] The Kassites were the first to introduce spoked wheels in Babylonia. Later, when the Mitannis established their authority in north Syria, they used the spoked wheel in this area. They are dated on the basis of inscriptions to 1380 BC. but had probably entered northern Syria in the sixteenth century BC. Gradually, the heavy solid wheels of the carts and war chariots were replaced by light wheels and gave way to the two-wheeled mobile equipage drawn by fiery horses. Slow-moving oxen or the occasional camel which drew a cumbersome cart with four wheels were not really needed.[36]

It is held that the use of the spoked wheel is not typical of the Indo-Europeans. Spoked wheels had appeared in western Asia around 1600 BC. before the advent of the Indo-Aryans or the eastern branch of the Indo-Europeans.[37] But there is no doubt that the horse chariot-centred war was not practised in western Asia before the appearance of the [proto] Indo-Aryans in the seventeenth-sixteenth centuries BC.[38] The spokes may have reached the steppes from western Asia earlier and reappeared in large number when the eastern branch of the Indo-Europeans appeared here. A terracotta wheel painted with spokes has been reported from late Harappan levels at Mitathal in Haryana.

The Horse in India and the North-Western Neighbourhood in c. 2000 BC.

The use of the horse spread in south Central Asia, Afghanistan and eastern Central Asia only after 2000 BC. We have considerable inscriptional evidence of the spread of the horse in western Asia between the seventeenth and fourteenth centuries BC. The Kassites owed their kingdom in Babylonia to the use of the horse and the chariot. When the Babylonians first saw the horse, they called it a foreign or mountain ass because of their familiarity with the ass. This reminds us of the Vedic term used for buffalo in India. Although the term *mahiṣa is* used for buffalo in the *Ṛg Veda*, the text also uses the terms *gaura* and *gaurī* which are derived from *go* or cow.

Excavations have exposed the remains of the horse at several places in south Central Asia, Iran and Afghanistan. The remains belong to the second millennium BC in the middle of which, numerous representations of the horse and chariot are found in Kirgizia, the Altai zone, Mongolia, the Pamir mountain ranges and above all, in south Tajikistan.[39]

The Indian subcontinent does not show a profusion of horse remains. Richard Meadow, who has made a thorough study of the remains, argues that until 2000 BC there is no clear osteological evidence of the presence of the horse in the Indian subcontinent.[40] In his opinion, the Pirak complex in Baluchistan provides the earliest evidence for the existence of the true horse in South Asia,[41] and this may not be earlier than the seventeenth century BC.[42] The life of the Indo-Europeans was horse-centred and they performed several rituals connected with the horse, but this does not apply to the mature Harappan culture. Whatever evidence we have belongs mainly to the period ascribable to later Harappan times. A terracotta figure of a saddle horse appears in Gumla in Baluchistan after the end of the Harappan phase.[43] More importantly, evidence of horse riding appears in the Kachi plains of Baluchistan between 1800 and 1300 BC and later. Terracotta figures of horse riders from this period have been recovered from Pirak[44] in these plains. The presence of the horse also occurs in the Chilas region of the Karakoram mountains in Pakistan.[45] The remains of the horse and horse furnishings of about the second millennium BC appear in the burials of the Gandhara Grave culture in the Swat valley in Pakistan.[46] The same valley provides evidence for the presence of the horse at a place called Ghaligai.

The presence of the horse in the Kachi plains of Baluchistan can be linked to not only its find in the Swat valley in the north[47] but also to that in Surkotada, where its bones have been reported from the lowest strata belonging to about 2100 to 1700 BC.[48] The Surkotada horse may have been contemporaneous with the Pirak horse. Horse bones discovered in the Harappan layers of Kuntasi, about 100 kms from Rajkot, are placed between 2200 and 1900 BC.[49] À horse bone is also found in Malwan in Surat.[50] The presence of the horse is attested in Mohenjodaro, Harappa, Ropar and Lothal, but is restricted to the later phase of the Harappan culture.[51] So far, horse remains or terracotta figurines have been reported neither from recent excavations at Harappa (1980-93) nor from those at Dholavira.[52] Terracotta figurines of the horse are found in Rangpur.[53] The presence of the horse in Lothal is exaggerated,[54] though this site shows a culture of the transitional phase which develops into the late Harappan culture.[55] Clearly, there is hardly any evidence for the presence of the horse in the mature Harappan culture. The instances that have come to light belong to late Harappan times, Le., 1600 to 1000 BC. when the Vedic people had settled in the north-west part of the subcontinent.

The discovery of horse bones in the Swat valley, including the Gandhara and Ghaligai graves, as also in

Bhagwanpura in Haryana is relevant to the spread of the horse in northern India. Bhagwanpura, situated in Kurukshetra district has revealed a culture in which the Painted Grey Ware phase overlaps with the late Harappan phase. Horse bones have been found in layers belonging to this overlap culture dated to c. 1300-1200 BC.[56] In the context of time and place, these finds can be related to those from Gandhara. Horse bones also appear in the PGW stratum of Hastinapur[57] around the middle of the first millennium BC. Several places in northern India reveal terracotta figurines of horses and bulb in the layers of the PGW phase.[58]

Speakers of the Indo-European languages did not spread suddenly over Europe and Asia. Despite their knowledge of the horse and chariot, they took a long time. They spread over the neighbourhood of the Indian subcontinent in Iran, Afghanistan and south Central Asia around 2000 BC, and their infiltration into the Indian subcontinent continued up to 1000 BC and even later. There is no doubt that the use of the horse and chariot contributed to their speed. It is difficult to visualise that the chariots came to India through the passes of the Hindukush mountains. Mounted horses, however, could certainly have done so with ease.

Wheeled wagons appear in the Harappan culture from about 2300 BC. but there is no indication of the use of spoked wheels by the Harappans; such wheels have not been found so far. However, spokes are depicted on the wheel of a toy vehicle.[59] Spokes or similar designs painted on a terracotta wheel from Dholavira belong to Phase 5[60] or late Harappan times. The spokes probably appeared in the Harappan culture when it came into contact with the Vedic people.

Archaeology of the Horse in *the Gangetic Plains*

Whatever the other features of the Vedic culture may have been, the widespread use of the horse is attested to by both the early and the later Vedic texts. Archaeologically, we have clear indications of the spread of the horse in the upper and middle Gangetic plains in later Vedic and post-Vedic times. In the Kuru-Pañcala area, horse bones are found at Bhagwanpura in Kurukshetra district[61] and at Hastinapur in Meerut district.[62] Horse bones appear in Atranjikhera in Eta district in PGW and post-PGW phases.[63] Further, in the PGW phase, terracotta toys included the bull and the horse.[64] Crudely modelled figurines of what are probably a horse and bull appear in Hastinapur.[65]

In the Northern Black Polished Ware (NBPW) levels of the upper and middle Gangetic plains, various terracotta animal figurines including the horse and the elephant appear at numerous sites. The horse occurs in terracotta forms in the mid-level of the NBPW period at both Hastinapur[66] and Atranjikhera.[67] Some horse and elephant figures have riders attached to them.[68] There are indications that the use of the domesticated horse may have spread from western to northern and eastern Uttar Pradesh. A single phase PGW culture at Purola in Uttar Kashi district reveals the presence of the domestic horse.[69]

Bones of a large equine found in Narhan in Gorakhpur district in Period I are dated to between 1000 and 800 BC though it is not clear whether they represent a wild or domesticated variety.[70] A terracotta figurine of a horse belonging to Period II reveals the use of iron but not of the NBPW[71] and is attributed to *c.* 900 to 700 BC.[72] However, the Narhan dates seem to be earlier by at least 200 years, for two samples from the middle level of its Period III B give radiocarbon dates not earlier than 300 BC.[73] Its

Period III may have been around 500 BC when Period II came to an end. The earliest clear evidence of the presence of the horse in the middle Gangetic basin occurs at Khairadih in Ballia district around 1000 BC.[74] Remains of certain wild and domesticated animals including the horse occur at Rajghat in the NBPW period (500 BC to 200 BC).[75] Terracotta figurines of the horse found in Prahladpur in Varanasi district belong to *c.* 500 BC or the mid-phase of the excavated site.[76]

From 500 BC onwards the domesticated horse seems to have spread over a large portion of the middle Gangetic plains. The NBPW phase in Rajghat,[77] Prahladpur, Buxar[78] Vaishali,[79] Chirand,[80] Sonpur,[81] Pataliputra[82] and Champa[83] shows representations of the horse in terracotta. Two stone moulds showing figures of horses have been found at Champa.[84] The horse was a favourite of the Pataliputra people.[85] K.K. Sinha thinks that horse figurines are less numerous at the Uttar Pradesh sites in 300-50 BC but are common between 50 BC and 300 AD.[86]

The horse symbolises speed and therefore the one harnessed to the chariot is called '*āśu*' or quick, evidently connected with *aśva*.[87] Hence this animal must have played an important part in the south-eastward advance of the Vedic colonisers, who probably came in small bands to the middle Gangetic plains from the Indo-Gangetic divide and the upper Gangetic plains.

Wheels *and Spokes in the Gangetic Plains*

Wheels, generally solid, were used on the carts and wagons of Harappan times over a large area of the subcontinent.[88] Various types of wheels common in the Harappan period appear in the PGW levels of Ahicchatra in Bareilly district.[89] But in the alluvial plains of Bihar, wheels are almost absent in the Chalcolithic period in Taradih[90] and Sonpur and rare in the Neolithic-Chalcolithic phases in Chirand.[91] However, horse-drawn chariots were in use in the Megalithic culture from the sixth century BC onwards.[92]

Whatsoever be their source, wheels on toy carts appear in good number at the middle Gangetic sites in the NBPW period which suggests the use of both solid and spoked wheels. Solid wheels made of clay occur in the early layers of the NBPW period and those with spokes in the last phase of this period at Atranjikhera.[93] The use of cart wheels can be inferred from terracotta objects found in Sonpur,[94] Pataliputra[95] and Vaishali[96] The general use of carts can be inferred from terracotta toy carts and their fragments found in Chirand[97] Sonpur,[98] Taradih[99] and elsewhere. Wheels also appear as symbols on punch-marked coins and uninscribed cast copper coins.[100]

The widespread use of wheels and carts/wagons in the iron-using cultures of the middle Gangetic plains may be contrasted with their near absence in the Chalcolithic cultures. The NBPW phase also gives several examples of spoked wheels, which were lacking earlier. Their appearance meant light carts and greater speed. Thus, in the NBPW period in the middle Gangetic plains, pedestrian or pack animal transport was reinforced by cart transport. From the fourth or third century BC onwards, toy cart models become common as is evident at early historical sites including Kausambi, Bhita, Sonpur, etc. It is significant that the spread of the use of the horse in the middle Gangetic plains was accompanied by the diffusion of animal sacrifice, cremation and above all, by that of the Indo-Aryan language which assumed a concrete shape in Asokan edicts issued from Pataliputra. All these traits along with the horse and the spoked wheel distinguish the Vedic culture.

The Horse and non-Indo-Europeans

It would be incorrect to assume that the Aryans monopolised the use of the horse, chariot, wheel and spoke. The Hyskos used horses and chariots which helped them to conquer Egypt in the sixteenth century BC. Though the Hyksos are considered to be closely connected with the Indo-Europeans, there is no definite evidence of their being speakers of Indo-European languages. Horse-drawn chariots from Central Asia and those represented in Pamir rock-carvings are not regarded as a specific identifying feature of the Aryans on the ground that they were not created in the steppes and were used from Egypt and Anatolia to China by 1500 BC and later.[101] But the horse appeared in the steppes much earlier. Although the horse and chariot were used in China between 1800 and 1200 BC by the Shangs, this animal originated neither in Anatolia nor in China and its neighbourhood. The domesticated horse appeared in the Black Sea and the Ural areas at least and perhaps more than 3000 years earlier than its advent in China or Egypt. This wide temporal and spatial gap needs to be explained. By 1500 BC the horse-drawn chariot was not confined to the speakers of the Indo-European languages, but *it was* certainly more typical of them than of others.

The *Significance of the Use of the Horse*

The advent of the domesticated horse marked a great watershed in the history of humankind. It transformed modes of subsistence, transport and warfare. Excavations in the area from the Black Sea to the Caspian Sea show that horseflesh was used on a large scale, and both mares and male horses were butchered for food. Further, horse riding enabled the people to hunt in a large area and made hunting far more effective. Hence the horse itself served as source of food and also enlarged other sources of food supply. It dramatically increased the availability of the exploitative resources by expanding the area of operation.

The use of the horse revolutionised the means of transport. Horses could be used for travelling long distances and for carrying goods as pack animals in much less time. Ordinarily, the saddle horse would cover 60 to 70 miles a day in the steppe area or more in the plains, and a pack horse would do 15 to 20 miles a day. Compared to pedestrians, the speed of horse riders increased five times.

The great speed and physical strength of the horse enormously increased the war potential of its users. Whatever be the equipment of the non-horse users in the late Neolithic or Bronze Ages, they could be easily overcome by the horse users. Since the Indo-Europeans were great horse-users, they spread rapidly in the late third and second millennia BC.

The possession of the horse and chariot gave rise to a horse-centred aristocracy which provided leadership to the community. Thus, the introduction of the horse initiated the process of social differentiation in previously egalitarian communities.

All these implications of the use of the horse have been worked out by David Anthony in the context of the Black Sea area during the fourth and third millennia BC on the basis of an American model of its use in the seventeenth and eighteenth centuries AD.[102] Although this exercise has been questioned by some scholars, the implications of Anthony's work are, by and large, acceptable.

In the neighbourhood of the Indian subcontinent and Iran which came to be settled by the speakers of the Indo-European languages, osteological and pictorial evidence attests to the widespread use of the horse from about 2000 BC. but evidence found in the Indian subcontinent is not adequate. Horse

remains as well as terracotta figurines of horses are found in Pakistan at several places in the Swat valley and in Baluchistan. They also appear in Harappan and PGW overlap layers in Haryana in India and in late Harappan layers in both India and Pakistan. The richest remains are found in the North-Western Province of Pakistan. But despite the find of rich horse furnishings in the Gandhara graves, wheels, spokes, etc., have not been discovered. We can better work out the implications of the use of the horse in the subcontinent and also establish the archaeological conflate of the *Ṛg Veda* if more sites are excavated. Since substantial horse remains have been exposed in the neighbouring regions of Central Asia, their presence may be inferred in the north-western parts of the subcontinent in the second millennium BC.

3 *Language and Inscriptional Evidence*

The eastern branch of the Indo-European language appears in inscriptions towards the end of the third millennium BC in lower Mesopotamia or Iraq and almost continuously from the sixth century BC onwards in Iran. The Indo-Europeans did not have their own script and, therefore, their language appears in the cuneiform script prevalent in Mesopotamia. Words belonging to the western branch of the Indo-European language occur in Hittite inscriptions in Anatolia from the nineteenth to the seventeenth centuries BC and show that the Hittites spoke this language. The extant Hittite texts were written largely between the sixteenth and fourteenth centuries BC, but some are copies of the originals dating to the seventeenth or sixteenth centuries BC.[1] Linguists hold that three Indo-European dialects were prevalent in Anatolia. Of these, the dialect called Lucian was probably current from 2300 BC onwards.[2] The term *inar* is used in the Hittite language. This clearly denotes Indra.[3] When the Hittite rule ended in 1100 BC, speakers of one of the three dialects adopted the hieroglyphic script, but their language continued to be Indo-European.

Words belonging to the western branch of the Indo-European language also appear around 1600 BC in Mycenae in Greece, which was not very for from Anatolia. However, inscriptions from Mycenae contain many names of persons and places which are non-Indo-European.

Significantly, the first linguistic traces of the Indo-Aryans or Proto-Indians appear on a tablet dating from the time of the dynasty of Agade. We come across two names reconstructed as *Arisen* and *Somasena* which, according to Harmatta, belong to 2300-2100 BC.[4]

Again around 1600 BC, Indo-European terms are found in Kassite inscriptions from Babylonia or modern Iraq. The Kassite rule started in the middle of the eighteenth century BC, but their oldest inscriptions belong to the sixteenth century BC. They show that the Kassites spoke die Indo-European language. Their inscriptions mention 'Suryash' and 'Marutash' which are clearly reminiscent of 'Surya' and 'Marut' in the *Ṛg Veda*. In the Kassite language the wind god is called Buriash, a term which seems to be related to the Vedic god, Vāyu; the term '*bayār*' for Vāyu is still prevalent in Hindi. In the works of Homer (ninth century BC), one of the two winds is called 'Boreas of the North'.[5]

Buriash comes at the end of the names of several Kassite kings, some of whom also use the term 'Indash' which is similar to Indra. All these Proto-Indo-Aryan (also called Proto-lndian) terms found in the Kassite language belong to the sixteenth to fifteenth centuries BC.[6] Kassite entry in Babylonia had begun from the eighteenth century BC onwards. Although the horse was known in Mesopotamia, as can be inferred from an ideogram of about 2500 BC in the cuneiform script, it came into common use only with the establishment of the Kassite rule. The Kassites brought the horse from the Zagros mountains and the Babylonians referred to it as the ass from the mountains. Thus, although the horse was known to them earlier, it came into general use only with the establishment of the Kassite rule.[7]

A clear indication of the linguistic presence of the Indo-Europeans is found in northern Syria or in the

land of the Mitannis in the fourteenth century BC. The Mitannian inscription mentions terms which are almost or exactly similar to Mitra, Varuna, Indra, Nāsatya, etc.[8] These gods are also found in the *Ṛg Veda*. Therefore the language of this inscription is called Indo-Aryan. Burrow prefers to call it *Proto-Indoaryan*.[9] The Mitannians had established their kingdom in the sixteenth century BC and Indo-Aryan terms are found in the names of their kings.

The Indo-European language is used as a medium in a Hittite text of the fourteenth or fifteenth century BC on horse-training and chariotry. The writer of this text was a Mitanni horse-trainer. The text tells of the speed of the horse, the time it is to be brought to the stable, the type of food meant for it and provides other horse-related information. It contains many words which are closely similar to the Sanskrit words. The numerals it employs for the courses which the chariot makes about a track are very close to the Sanskrit numerals. They are *aika* (*eka*), *tera* (*tri*), *panza* (*pañca*), *satta* (*sapta*) and *na* (*nova*). A text in the Hurri language describes the colours of the horse as *babru* (*babhru*), *parita* (*palita*) and *pinkar* (*piṅgala*).[10] These terms respectively mean brown, grey and reddish. It may be noted that the words similar to *babhru* and *palita* are found in most Indo-European languages. Thus it will appear that we have clear evidence of the presence of the speakers of the Indo-European language in the area from Greece to Syria in the second millennium BC.

The Phrygians also spoke the Indo-European language and their inscriptions appear in Anatolia from the eighth to the sixth century BC.[11] They are first mentioned as enemies of the Assyrian empire. An Assyrian inscription of the twelfth century BC mentions that a tribe called Muski invaded Assyria with 20,000 people. The Muskis have been identified with the Phrygians.[12] The term Muski is derived from the *Ṛg Vedic* term *muṣaka,* which means mouse and has its cognates in Greek, Latin, Lithuanian and the Slav languages.[13] It is most likely that the mouse was a totem of the Muski tribe. The eastern branch of the Indo-European language is represented in the inscriptions of Iran from the sixth century BC onwards, but it is surprising that until the third century BC, the Indo-Aryan language does not appear in any Indian inscription.

Inscriptions may throw some light on the routes of the speakers of the Indo-European language. It is likely that the Indo-Europeans came to Anatolia from the region of the Black Sea. But there is no clear evidence about the route taken by the speakers of the Proto-Indo-Aryan language who appear in ancient Iraq and Syria. In all probability, the Proto-Indo-Aryan language was developed in the phase of the Andronovo culture extending from the Volga in the west to the Chinese border in the east. One could speculate about the possible divergence of the Proto-Indo-Aryan people from the speakers of the Troto-Indo-Iranian' language in that area.[14] The event could have taken place around 2000 BC or a little later. According to Burrow, the *Proto-Indoaryans* first came to Iran from where they were displaced by 'Proto-Indo-Iranians'. As a result of displacement the Proto-Indo-Aryans went westward as well as southward. The *h*-speaking peoples, i.e., the Iranians, gradually expelled the s-speaking peoples, i.e., the Indo-Aryans, until the latter finally made their way to India.[15]

4 *Aryan Rituals*

Animal Sacrifice

The earliest texts belonging to the eastern branch of the Indo-European language attest to the prevalence of the post-cremation banal, the fire cult, the cult of *soma*, and animal sacrifice including horse sacrifice. The Vedic and the Avestan people are distinguished by their rituals. We have to examine whether the rituals were typical of the people who settled down in Iran and India and whether such rituals are found elsewhere.

It seems clear that animal sacrifice appears not only in India and Iran but also in Greece and Rome. It is found in some other ancient Indo-European communities as well,[1] for which linguistic evidence has been adduced.[2] Cattle sacrifice is found commonly in Vedic texts and in the Avesta.[3] This sacrifice also appears in Homer but that of sheep is more important[4] Animal sacrifice may have been more important in the initial stage of stock breeding. So long as the cattle rearers do not use dairy products and employ animals in agriculture and transport, they continue to eat the meat of their domesticates. Some tribal people do not consume milk on account of a curious belief. According to the Gonds of central India and the Deccan, for instance, milk is meant only for calves and not for anybody else. Some tribals drink the blood of cattle but not the milk. Thus, in earliest times, the cattle rearers offered meat to their gods and in return asked for cattle wealth so that their practice of sacrificing cattle and eating meat might continue.[5]

According to Lincoln, the religious rituals of the Indo-European stockbreeders are similar to those found in the cattle rearing society of Eastern Africa. The cattle sacrifice of the Vedic period, called *paśubandha*, had certain traits which can be traced in the steppes of eastern Europe. The practice of animal sacrifice appears in south Russia and the Ukraine in the Sredny Stog culture (4500 to 3500 BC). At a place called Derevika, the head of a stallion together with the left foot bones of a horse, the remains of two dogs, and a figurine in the shape of a wild boar indicate evidence of rituals.[6] At another place in the lower part of the Dnieper river basin we notice remains of cattle and horse belonging to 4000-3500 BC. Beneath a *kurgan* or burial place in a circular area, bones of animals, potsherds and traces of ochre are found.[7] Such *kurgan* burials have been discovered in a large area lying north of the Black and burials reveal that bones of horse, etc., were offered to the dead in the form of food. Frequently, the skull and forelegs of a sheep were offered.[8]

The practice of animal sacrifice was common in ancient Iran. The *Avesta* often mentions of 100 horses, 1000 oxen and 10,000 sheep or goats.[9] It also mentions promises made for die sacrifice of 1000 horses, 1000 camels, 1000 oxen and 1000 young ones of all species of small cattle.[10] It has to be noted that there is provision for the sacrifice of cattle, horse, sheep and even pigs in Vedic literature. The*Śotapatha Brāhmaṇa* contains all these instances. The same text also lists certain categories of human beings and animals considered unfit for sacrifice. This list includes impotent persons, *gaura* (a kind of buffalo),

araṇya (wild animal), *uṣṭra* (camel) and *śarabha* (elephant).[11] It is evident that the people who lived in Eurasia were not familiar with the buffalo and the elephant. Therefore, the remains of these animals are not found in the burials of south Russia and the Ukraine. In the Indian subcontinent, buffalo sacrifice started in subsequent times, but there is no provision for it in Vedic texts. It seems that the animal sacrifice of Vedic times was similar to that prevalent in south Russia and the Ukraine where it appears around 4500 BC. S.R. Rao, excavator of Lothal, states that animal sacrifice prevailed in Lothal, but there is really no evidence to prove this. What have been found in Lothal are some burnt pieces of the body of a bovine animal.[12] The find indicates the practice of eating meat and not the performance of animal sacrifice.

The Horse Sacrifice

The Indo-Europeans also adopted the use of the horse, but perhaps none of them performed the horse sacrifice which was known as *'aśvamedha'* in India. In Vedic times, the king or the chief performed the *aśvamedha* to assert his suzerainty. A horse was set free and the territory traversed uninterrupted by it and the warriors of the chief/king, was considered to have fallen under the sway of the royal sacrificer. On its return, the horse was sacrificed and its body dismembered. The king's favourite wife had to lie down with the dead horse, and 'cohabit' with it under covers.[13] Homer does not mention any horse sacrifice ceremony, though he indicates that horses were sacrificed to the dead.[14] In the Indo-European community of Rome- the horse was sacrificed in October and the ritual was called the *October Equus*. After a horse-race, the team horse on the right was killed with a spear and then dismembered.[15] We also hear of a mace being sacrificed and dismembered on the occasion of the enthronement of a tribal king in medieval Ireland.[16]

Louis Renou holds that the *aśvamedha* or horse sacrifice was an Indo-European ritual.[17] Clearly; there is no evidence of the horse sacrifice in pre-Vedic India. The earliest example of horse sacrifice is found in 4500-3500 BC in south Russia and south Ukraine, but the horse was offered to the dead along with cattle, sheep, goat and dog.[18] However, the offering of the horse seems to be important in some burials. In a burial of Gerasimovka I, ritual remains of the horse have been found alone or together with either cattle or sheep.[19] A sacred place exposed in Sezzhee, situated in the middle Volga forest-steppe, contains remains of two horses.[20] In the cemetery of Sintashta in the sixteenth century BC, seven horses were sacrificed in only one grave.[21] However, horses may have been buried along with the dead to provide them with either food or transport in the next world. Archaeological instances do not indicate horse sacrifice during the lifetime of human beings. This may be due to lack of settlement excavation. It is argued nevertheless, that the sacrifice which was performed by a person may also have been projected into a ritual by the community on the death of that person. But there is no doubt that the horse was sacrificed either independently or together with other animals in the area between the Black and Caspian Seas. This practice was perhaps transformed in Vedic times into the *aśvamedha* which is described elaborately in later Vedic texts. The same practice may have been turned into the *October Equus* in Rome.

The Fire Altar

The cult of fire is the most significant cult in the *Avesta,* but although Agni is an important god in the *Ṛg Veda,* burning fire was not independently worshipped in Vedic times. Fire was treated in Vedic

times as an intermediary who carried the libations offered to him to the gods. Though the fire altar is not clearly mentioned in the *Ṛg Veda*, it is discussed in great detail in later Vedic texts. Fire was worshipped in the fire altar, which also served as an over or *chulha* in which food was prepared for the gods.

It cannot be asserted that the fire altar was typical of the Harappan people. Fire altars have not been found in the main sites of Harappa and Mohenjodaro. However, there is mention of one from Amri in Baluchistan.[22] While its identity is questioned, its date has yet to be determined. Several round and rectangular structures in Lothal have been termed fire altars by Rao.[23] But Rao rightly suspects that these might be treated as ovens, Hence he argues that they are large in size and have no openings for supplying fuel.[24] However, except for two structures, which are 70 sq ft each, all the others are very small. Generally, the circumference of the round structure is 1 ft 6 inches, while the rectangular structure is one and a half sq ft.[25] In the illustrations given by Rao, all three fire altars' appear along the side of the wall.[26] It may be noted that neither is there any provision for erecting altars beside the wall, nor does such a practice prevail. Again, it is laid down that the *āhayanīya* or the sacrificial fire, should be separated from the *gārhapatya* or the household fire, by a distance of eight *prakramas,*[27] which indicates a length of about 15 ft[28] Most structures from Lothal do not fit this rule and therefore cannot be regarded as fire altars. It is possible that they worked as communal ovens in which fuel was supplied from above. The function of the large-size structure is not clear; it may have served as a fireplace. The excavator assigns the earliest evidence of a fire altar to Lothal II A.[29] The radiocarbon date of this is 1555 +/-135 BC[30] Since most structures can be dated to around 1500 BC, even if they are considered fire altars, the influence of Vedic contacts cannot be ruled out.

Seven structures found in Kalibangan are called 'fire altars' because a more suitable term is not available.[31] The shapes of these 'altars' are not clearly indicated. It is significant that all of them lie beside the burnt brick wall.[32] But the ritualistic texts do not provide for such a location of fire altars (citi, *agnyādhāna)*. Therefore, these structures cannot be called fire altars. Even their excavator, B.B.Lal, does not express this opinion clearly. Further, they seem to have appeared towards the end of the Harappan settlement[33] in Kalibangan around 1650 BC,[34] and their presence is also attributed to Vedic contacts. [35] Whatever their origin, the fire altars found in Lothal and Kalibangan are looked upon with suspicion.[36]

A few elements of Vedic culture are found outside the Indian subcontinent, but fire altars of the Vedic type are not known outside this region. Hearths are found in the *hurgan* burials of the Ukraine (4000 to 3500 BC). They are noticeable not only on the *kurgans* but also next to the burials.[37] Two hearths found at Tulkhar Tepe in south Tajikistan date to the middle of the second millennium BC. Round ovens found in the graves of women have been called *gārhapatya* and rectangular hearths found with men are called *āhavaniya.*[38] The *Śatapatha Brahmana.* provides that the *śmaśāna* (tumulus) of the constructors of the fire altars should be rectangular,[39] but no fire altar is to be located in the tumulus. It seems that the Vedic fire altars were associated with the sacrificer during his lifetime. The hearths found in the graves certainly carried ritualistic significance but they cannot be compared with Vedic altars. They may have served as fireplaces in colder seasons or may have been provided in the graves for cooking. As is well known, all worldly comforts were provided in the pyramids of Egypt: besides provision made for eating, sleeping and hunting, even toilets were provided. However, altars or

fireplaces are not set up in the pyramids. Such a provision seems to be a special feature of the horse-using people of Eurasia.

Importantly though, certain fireplaces found in Turkmenia exist independently of burials. At Togolok-21, there is clear indication of a fire cult in a temple and the fire altars of this place are dated to around 1800 BC.[40] TWO altars have been dug on the campus of a fire temple. The small altar is dedicated to the fire god and the large one is meant for receiving libations. Both these structures are situated outside the central area of the citadel.[41] Fireplaces of the Iron Age (1200 BC) have been found at Ferghana in Uzbekistan. Square and round fireplaces with pits have also been found in ancient Sogdiana.[42]

In the Indian subcontinent, fireplaces have been reported from levels dating to 1500 BC or earlier. Those found in the Kachi plains of Baluchistan from 1800 to 1100 BC are square. Cooking vessels were placed on them with the help of die firedogs. Similar firedogs have been found in the fireplaces of the beginning of the Iron Age in Feighana.[43] Fireplaces are reported also from Punjab and Haryana around 1000 BC or a little earlier, and this is the time when they also appear in Turkmenia and south Central Asia.

Three domestic ovens have been found in the black-and-red ware stratum of Atranjikhera just before the PGW layer. One of these appears to be a sacrificial pit, and the excavator places it between 1450 and 1200 BC.[44] But it seems to belong to 1000 BC or to a later date, as the radiocarbon date for the pre-PGW black-and-red ware phase of Atranjikhera is not earlier than 875 BC.[45]

More importantly, pits suggesting fire altars have been found in the overlapping layers of the late Harappan and the PGW cultures at Nagara in Jalandhar district and at Dadheri in Ludhiana district.[46] Nagara has two round structures of burnt brick which are considered "probably" religious.[47] Three round structures are also found in Dadheri and are similarly called "probably" religious.[48] Much later, such structures are found in Mathura. These are dated to *c.* 300 BC and in Kausambi they are dated to around 200 BC. But the pits found in Baluchistan, Punjab, western Uttar Pradesh and outside the subcontinent can be associated with a new people who seem to have spread the fire cult and the fire altar.

The Soma Cult

The cult of *soma,* called *haoma* in the Avestan language, was typical of both the Vedic and the Iranian people. It occupies an important place in Vedic rituals, because having drunk *soma*, Indra is thought to have performed extraordinary feats.

The identification of the *soma* plant has been a subject of long debate. Recent archaeological discoveries show that the earliest evidence of the *soma* cult occurs in Turkmenia. The *soma* drink was probably prepared on the premises of the temple of Togolok-21 in Maigiana which is identical with the Muighab river delta in south-eastern Turkmenia. Here, a row of vessels has been discovered on a special brick platform. The *soma* drink was poured into these vessels which were taken by the priests to the altar where libations were offered.[49] Small twigs of a plant called *ephedra appear* in the vessels. These twigs have been identified by Harry Falk with *soma*.[50] All these discoveries are ascribed to the overlap of the pre-Andronovo and later Namazga-V cultures.[51] Therefore, the *haoma* or *soma* cult seems to have appeared around 1800 BC.

Soma clearly appears in the form of *haoma* in the *Zend Avesta*, but its cult or the drink of *soma* does not appear in the western branch of the Indo-European communities. It is possible that the practice started among the pre-Zoroaster people from whom the Avestan people adopted it. If the identification of *soma* with *ephedra* is correct, the cult of this drink obviously came to India via Iran.

Cremation

Cremation is seen as a trait of the pastoral people who did not bury their dead in the earth from which they were removed by the nature of their economy.[52] It is also held that advances in metallurgy revealed that fire could transform metals into various objects, and hence it came to be associated with the body in the hope that the dead could be rejuvenated.[53] Whatsoever be its origin, cremation was practised by the Vedic people along with burial. However, it became more typical of the Vedic Indians and was probably also practised by the proto-Iranians. The Harappans and the pre-Vedic people generally buried their dead. Cemetery H (2000 to 1400 BC) in Harappa shows the burial of only a part of the dead body, a practice attributed to newcomers. Recent horizontal excavations in Harappa undertaken by American archaeologists (1986-93) do not indicate cremation so far.[54]

The *Ṛg Veda* shows that both burial and cremation were customary. Renou finds it difficult to determine whether cremation, the collection of burnt bones in a vessel and its burial, and rituals connected with impurity, funeral rites, etc., are Indo-European.[55]

Though the *Avesta* forbids cremation, Geiger conjectures that the *dakhma* (the place where Parsis dispose of the dead) was originally a place for cremation.[56] Mills suggests that both burial and cremation may have been permitted in the Gathic period and adds that at least the original Mazda-worship did not recoil from cremation.[57]

In Europe, the earliest cremation graves occur north of Budapest in Hungary and belong to the forty-ninth and forty-seventh centuries BC.[58] In the fifth millennium BC they also occur in Bavaria and Holland.[59] In Asia, the earliest trace of cremation appears in the northern part of Kazakastan, in the steppe zone of Central Asia, in the Neolithic phase, probably between the fifth and third millennia BC.[60] Cremation remains in rectangular urns are also reported from Palestine and placed perhaps at the end of the fourth millennium BC.[61] Cremation prevailed in south Anatolia around 2500 BC, in the middle Danube basin around 2000 BC,[62] and in the lower Volga and the southern Urals during the classical Timber-grave period.[63] Vessels resembling human faces and containing post-cremation remains have been found in the Danube basin and some of these belong to the end of the Chalcolithic phase.[64] Several post-cremation burials of this basin are attributed to about 1500 BC. [65] Cremation obtained in Greece in the time of Homer (c. 900 BC) together with the practice of burial.[66] References to the burning of the dead occur in the *Iliad*,[67] which also mentions the post-cremation barrow.[68] Post-cremation burial was also prevalent in Italy. The pre-Villanova culture, which covered a major part of Italy in 1100-900 BC and contributed considerably to the spread of the Indo-European languages, reveals post-cremation burial on a large scale.[69] In the Hallstatt cemetery, which is probably early Celtic, 455 cremation graves and 525 inhumations were found.[70] This shows that cremation prevailed in France around 1000 BC or earlier. Cremation remains appear predominantly in Germany, Poland, Lithuania and Scandinavia and the idea may have been influenced by the Villanova culture, spreading via the Hallstatt culture to Sweden.[71]

In the east, the practice spread in the later half of the second millennium BC in south Tajikistan which was situated to the north of the Hindukush and the Pamir mountains. More than 300 post-cremation graves of the later Bronze Age (1300-900 BC) have been found in the cemeteries of Tulkhar Tepe and Aruktau.[72] The practice appears in the Swat valky of the Indian subcontinent which is situated 500 km south of Tajikistan. Human faces appear on urns in Gandhara and the introduction of this practice is assigned to 1800 BC.[73] Although the earliest post-cremation burials of Tajikistan belong to 1300 BC, the practice may have started in that area much earlier. It was fairly easy to reach Gandhara from south Tajikistan by following the course of the Kabul (Kubha) river.[74] The practice also appears in Ghaligai in the Swat valley around 1400 BC. After the end of the Harappan culture at Gumla in Baluchistan, we have clear evidence of post- cremation burials in which animals were sacrificed and buried along with the cremated human body.[75]

Whether or not cremation prevailed in the Indian subcontinent from pre-Vedic times is debatable. John Marshall holds that it was common in the prosperous phase of the Indus civilisation.[76] At the same time he states that the evidence regarding the disposal of the dead in Mohenjodaro is very meagre.[77] He also adds that there is 110 evidence regarding the disposal of the dead when the Indus civilisation was at its peak.[78] These contradictory statements make it difficult to accept Marshall's view that cremation was common in the mature phase of the Indus civilisation.

Vats indicates that he found 176 post-cremation burials at Harappa. Of these, in 175 cases nothing apart from the bones of animals has been found; only one burial pot has some remains of a human tibia which is not burnt.[79] But from human bones found in the graves of Baluchistan[80] it is inferred that post-cremation burials also took place in Harappa. It may be noted that instances of post- cremation burials in Baluchistan in the Chakolithic phase occur only at those places which show the typical pottery of the Indus culture.[81] In Sind or Punjab, post-cremation burial pots appear towards the end of the Indus civilisation which may have been true of Baluchistan because of its proximity to the Indus region. Vats mentions that such burial pots from Harappa belong to the late and middle periods.[82] According to Marshall, the major portion of evidence regarding the disposal of the dead in Harappa belongs to the latest period of the settlement when the occupation of Mohenjodaro had probably already come to an end.[83] Marshall has reproduced the photographs of three burial pots. In his view, two definitely belong to later times, and the third probably belongs to the same period.[84] This implies that all three pots belong to the post- 1600 BC period.

We thus find that human remains are almost absent in the pot burials. It appears that birds, animals; etc., were burnt and cooked and placed in pots for the dead. Since human remains do not occur along with bird and animal remains, post-cremation burial in Harappa seems to be doubtfùl. Even if we accept its prevalence, it clearly did not obtain in the mature Harappan culture, but appears after 1700 BC. Vats states that Cemetery H in Harappa belongs to the last phase of the Indus civilisation.*[85] Evidence of post-cremation burial appears in late Harappan times, around 1600-1500 BC, perhaps on account of Harappan contacts with the speakers of the Indo- Aryan languages.

Inadequate excavation may explain the paucity of post-cremation burials in PGW and late Harappan layers in Punjab, Haryana and its neighbourhood. A limited excavation of a Harappan settlement in Rajas than shows five cases of cremation.[86] This may have been a late Harappan (1600-1200 BC) settlement. Cremation is amply attested to by later Vedic texts (1000-500 BC), though so far it is not

supported archaeologically in the upper Gangetic plains. However, several pits, stupas and burial mounds found in the middle Gangetic plains clearly show post-cremation burials dating to between 600 and 300 BC.[87]

The early Vedic texts speak of burying the bones after cremation.[88] The *Śrautasūtras* and the *Grkyasūtras* provide for the collection of bones, and the *Śatapatha Brāhmancr*[89] prescribes the burial of bones and erection of a *śmaśāna* or tumulus on it. Comparisons clearly indicate the similarity in the manner in which the *kurgans* were set up in south Russia, south Ukraine and the Volga area. This practice was followed much earlier than the date of the earliest Vedic texts.

Both the *Ṛg Veda* and the *Atharva Veda* show that animals were commonly burnt with the dead bodies of human beings. The funeral rite of the *Ṛg Veda*[90] shows that a goat was burnt along with the dead body. According to the *Atharva Veda?*[91] a working ox was burnt with the dead person. Homer refers to the killing of sheep, cattle, horses, dogs and men and the burning of their carcasses with the dead body of a chief.[92]

The texts on funeral rites do not prescribe the slaughter of birds and animals in order to provide the dead with food in their graves. However, the *Āpastamba Dharmasūtra*[93] indicates that the brahmanas must be fed with meat and fish which will satisfy the *pitaras* or fathers. Though this text cannot be placed earlier than 500 BC, it contains some relic of the Vedic practice. The *āpastamba* is reminiscent of the age when people relied to a great extent on animal food. Pastoralism dominated the life and culture of Indo-European communities. People believed that they would need meat even after death. Indications of such a belief are found in India and outside, but the provision made for non-vegetarian food in the *kurgan* burials is not found in Vedic funeral rituals.

The archaeology of animal sacrifice including the horse, cremation, fire rituals and *soma* cult, leaves little doubt that these had long been M use in Central Asia and parts of Europe before they became common in the Indian subcontinent on account of the advent of the Vedic people.

5 *Social and Economic Aspects*

Male Dominance

Male dominance is an important trait of Indo-European society. Anthropologists attribute patriarchy to the masculine qualities needed in plough agriculture and to the control of female sexuality. But since horse riding also required masculine qualities, it may equally, together with ploughing, have led to male dominance. The primacy of paternity is attested to by early Indo-European terms and laws. In Latin, the term fatherland', i.e., *patria*, is created from *pater*. The adjective *patrius* is derived from *pater* and refers exclusively to the world of the father. There is no co-relative term for 'mother', and the word *matrius* does not exist. This is because Roman law did not provide for any authority or possession which belonged to the mother in her own right.[1] According to Roman law, the wife, the children and the slave of a Roman head of a house (*paterfamilias*) were equally subject to his unrestricted power (*vitae nacisque potestas*) and were equally outside the jurisdiction of the state.[2] The Indo-European tradition of authority over the wife was strengthened by brahmanical law. Manu declares that the wife, the son and the slave are unpropertied; whatever they earn is the property of those to whom they belong.[3] The ancient Indian law givers hold that a woman is never independent[4] Male dominance is clearly indicated by early Avestan and Greek texts.

Traces of patriarchy known from the early texts are reflected in burial practices in Eurasia. In northern Europe in the fourth millennium BC, Corded Ware people buried males on their right side and females on their left side.[5] This is also true of the cemetery at Nalchik, a north Caucasian site[6] of about the fourth millennium BC. It also applies to the Tazabagyab culture south of the Aral Sea and to the Tulkhar burials[7] in Tajikistan, both of which were variants of the Andronovo culture in the second millennium BC. The Tulkhar burials show rectangular hearths for males and round hearths for females.[8]

The sacrificial slaughter of women on the death of their husbands is indicated by some burials in the fourth millennium BC in the areas of Poland and the Baltic states, [9] in the Danube region in the third millennium BC[10] and in Italy.[11] Many graves in these areas contain horse remains and numerous copper objects considered typical of the Indo-Europeans.

Economic Activities

Colin Renfrew regards agriculture as a cultural marker of the Indo-Europeans. He argues that the earliest farmers lived in Anatolia in the seventh millennium BC and the Indo-European language spread to other parts of the world with the diffusion of agriculture.[12] But the seventh and sixth millennia BC show several other centres of agriculture including Iraq, Iran and Pakistani Baluchistan. In fact, the cognate terms for animals and the earliest texts (the *Ṛg Veda*, the *Avesta* and Homer's works), show that stock breeding was far more important among the Indo-Europeans than agriculture which may

have contributed to animal husbandry. The ancient texts also consider stock breeding to be more important The *Ṛg Veda* is full of references to cattle raids and booty and wealth in cattle.[13] The *Avesta* shows great concern for pasturelands from which both herds of animals and communities of people received sustenance.[14]

Copper tools may have been used by the Proto-Indo-Europeans. The Sanskrit term *ayas* has its parallels in Latin, Gothic and Old German.[15] Generally, it is taken to indicate copper and the meanings[16] 'bronze' and 'iron' are seen as later semantic developments. Cultivation and stock breeding together with the use of copper are attested archaeologically since 4500 BC from eastern Europe through Central Asia to northern India. It is very difficult to attribute these sources of subsistence to any particular territory or time.

The elements of the Proto-Indo-European culture reconstructed on the basis of linguistic evidence show a developed stage of Neolithic economy which does not emerge until the ^middle of the fifth millennium BC. They belong to the second phase of the Neolithic culture or the Eneolithic Age, which witnesses a secondary products revolution according to Andrew and Susan Sherratt,[17] They show horse-centred cultures marked by wheeled vehicles and mounted horses, the superiority of man over woman, ploughing, intensive stock breeding, the use of dairy products and of copper/bronze. On the basis of the work of Marija Gimbutas and other archaeologists, Mallory shows that the earliest recognisable Indo-European culture flourished at Sredny Stog in south Ukraine between 4500 and 3500 BC with its spread in the area between die Don and the Dnieper rivers.[18] In it, stock breeding was supplemented by agriculture, hunting and fishing; the horse was used for meat and riding; and copper tools were also employed.[19] Former Soviet archaeologists thought that stock breeding formed the primary core of the Sredny Stog economy.[20]

The second stage appeared in the Yanmya culture between 3500 and 2500 BC near the Volga river in the east. It was a well developed form of the Sredny Stog culture. Although the Yamnya culture was overwhelmingly based on stockbreeding, it was distinguished by the use of wagons which are first attested in the Pontic-Caspian area during this period. More copper was used compared with that used in earlier periods and local metallurgical centres[21] developed as well.

The third stage is provided by the Andronovo culture which covers a large stretch of land from the Urals to western Siberia and from the forest steppes in northern Central Asia to Tajikistan in the south. This area includes the Aral Sea and the two rivers, Amu Darya and Syr Darya. The culture started around 2200 BC. Alena Kuzmina suggests that the Andronovo culture was the counterpart of the material culture common to the *Ṛg Veda* and the *Avesta*.[22] Mallory suggests "its fundamental genetic association with its western neighbours in the Pontic-Caspian"[23] area, but the contribution of Central Asia to the making of this culture seems to have been substantial. In any case, it is clear that the Andronovo and a few other allied steppe cultures discovered in former Soviet Central Asia are broadly similar to the Vedic and the Avestan cultures in respect of animal sacrifice, funeral rites, settlement patterns and economic activities.

6 *Towards a Conclusion*

The Aryans and the Harappan Culture

It is claimed that the Aryans created the Harappan culture. However, such a claim is baseless. Majumdar, Nilakanta Sastri, Bhandarkar and Raychaudhuri, who believed in the greatness of Indian culture did not consider the Aryans to be the creators of the Harappan culture. The mature Harappan culture is placed between 2500 and 1700 BC, while the Vedic people appear on the scene later. Despite indications of contact between the Harappans and the outsiders there is nothing to show that the elements of material culture prominently associated with the Aryans dominated Harappan civilisation. It is significant that the *Ṛg Vatic* culture was pastoral and horse-centred, while the Harappan culture was neither horse-centred nor pastoral. Whatever evidence we have for the remains of the horse belong to later Harappan times.

The culture which has been reconstructed on the basis of the *Avesta* and the *Ṛg Veda* does not have its counterpart in the Harappan culture. The Harappan centres show a well-planned city and provide strong evidence of crafts, commerce and store houses. Harappan monuments were built of burnt bricks and the lanes in the city were covered with them. The *Ṛg Veda* on the other hand, does not show any trace of these elements.

Indra, the chief God of the Aryans, is described as a destroyer of forts, i.e., *purandara*. Sometimes *pur* is understood to mean fortified settlement' but it is also interpreted as Village'. Even if *pur* is taken as a fortified settlement it may possibly refer to a small settlement in later Harappan times. It may also point to some of the forts which were destroyed in Baluchistan, Afghanistan and the neighbouring regions of south Central Asia around 1800 BC. On the basis of stratigraphy, Dani holds that the grave people of Gumla, who practised post-cremation burial, destroyed the Harappan culture of the Gumla site.[1] It is significant that the *Ṛg Veda* does not refer to real forts in the possession of the Aryans. The Aryans pray to Agni and ask that he protect them as a fort would.[2] The later Vedic texts attribute the cause of the defeat of the *devas* at the hands of the *asuras* to the lack of forts or *pur* among the former.[3]

Futile attempts have been made to read Sanskrit in the Harappan script. The Harappan script has been in the process of being deciphered over the last 70 years during which more than 50 scholars have tried their hand at it. Most scholars work on the basis of the hypothesis of a proto-Dravidian language. Mahadevan has made a commendable effort in this direction. With the help of the computer, he has analysed the signs of the Harappan script and given useful information about its orientation But so far, scholars have not accepted the results of the readings of those who have tried to decipher the Harappan script on the basis of either Proto-Dravidian or Tamil. Efforts have been made to read the Harappan script with the help of several non-Indo-European languages such as Elamite, Sumerian and Egyptian, but nobody has achieved any mentionable success. However, those who have tried to read the script on the basis of Proto-Dravidian and other non-Indo-Euiopean languages are in a larger number.

Clearly there is little possibility of the Harappan script being written in the Indo-Aryan language. Indo-

Aryan languages appear in the north-west of the subcontinent and then spread towards the east and south. The existing substratum of languages in the Harappan area shows that the earliest language prevalent in that area is not Indo-Aryan. It is remarkable that the Brahui language which belongs to the Dravidian stock is found in Baluchistan on the west of the Indus. The Brahui-speaking belt appears to be the remnant of a larger area in which a Dravidian language was spoken. At present it is like a small island in the vast Indo-Aryan speaking ocean around it. But in ancient times it may have been connected with Proto-Dravidian settlements within the territory of what is now Iran. Harmatta identifies these settlements as those of Kopet Dag and possibly of Shahr-i-Sokhta.[4] The Indo-Aryans or the Proto-Indians first settled in this part of the Indian subcontinent and because of mutual contact, they seem to have borrowed many terms of Dravidian origin into the Sanskrit language. These words could not have been derived from the area south of the Vindhyas because in the Indian peninsula, the inscriptional presence of the Dravidian language is not earlier than 300 BC and the advent of this language in the south cannot be pushed back earlier than 1000 BC.

Recently, it has been demonstrated that the Dravidian language is linked with the Elamite language. The Elamites had set up a large kingdom in the third millennium BC in south Iran, and they had also developed a script which is closer to the Sumerian and can be placed in the later half of the fourth millennium BC. The script therefore, can be called proto-Elamite. It is impossible to think of the presence of Indo-Aryans in south Iran in the fourth and the third millennia BC because of the effective presence of the Elamite kingdom. The language found in the Elamite inscriptions of the third millennium BC has been connected with the Dravidian languages. The linguist, MacAlpin, holds that both the Elamite and the Dravidian languages belong to the same language family and postulates the presence of a Proto-Elamite-Dravidian language. According to him, the Brahui language found in Baluchistan is derived from this language and belongs to the northern Dravidian family. MacAlpin throws light on the pastoral vocabulary of the Proto-Elamite-Dravidian language and shows that with the progress of the Dravidians in the Indian subcontinent, this vocabulary underwent modification.[5] It is significant that the Proto- Elamite-Dravidian language has only one type of word for brick. This discovery is of the greatest importance because bricks were used on a large scale in the Harappan and the other neighbouring urban civilisations of the Bronze Age. After the end of the Harappan culture, burnt bricks are not found (so far) in northern India until 300 BC, although mud bricks are probably mentioned in later Vedic literature. According to MacAlpin, the Proto-Elamite-Dravidian culture disintegrated around 4000 BC. Whatever the exact date of this event might be, historians are gradually accepting the close relationship between the Elamite language and the Dravidian languages which include Brahui.[6] All this shows that a vast area with a pre-Aryan population extended from south Iran through Afghanistan to Baluchistan in which the speakers of the Indo-Iranian and the Indo-Aryan languages settled after 2000 BC.

It is argued that fire altars are a trait of the Aryans and they have been found in Lothal and Kalibangan, but significantly enough, they are reported neither from Harappa nor from Mohenjodaro.[7] As shown earlier, the practice of cremation favoured by the Vedic people did not prevail in the mature Harappan phase.

Attempts are also made to argue for an Aryan character of the Harappan culture on the basis of the find of a 'Śiva' image. An image on a seal around which there are several animals has been found. However, this cannot be regarded as Paśupati Śiva.[8] Similar horned images are also found in early times in Central Asia and elsewhere. Although the hymns of the *Ṛg Veda* are dedicated to numerous gods,

Śiva is not mentioned in any of them.

The excavations of Harappa have exposed many human skeletons. These have been carefully examined and none of them can be called 'typical Aryan'. These skeletons are placed in three categories. They suggest that some people came from the Mediterranean area and lived in western Asia. The second category belonged to the Proto-Austroloid stock and their anatomical features are found among the Dravidian peoples. Proto-Austroloids live in Australia and in the islands of the Indian Ocean. The third category is that of the Mongoloids and only one skeleton of this type has been found. So far the Harappan skeletons do not give any evidence of the presence of what is considered to be the Aryan physical type, which itself is a matter of considerable debate.

It is argued that the later Vedic Aryans created the Harappan culture.[9] However, the later Vedic culture does not match the Harappan culture. In later Vedic texts the cattle rearing society of the *Ṛg Veda* becomes primarily agricultural. The people use iron though its use is confined mainly to war and hunting. Iron is clearly attested in the Vedic texts.[10] Iron is not used in the Harappan culture which employs bronze and stone implements. Further, the types of crafts, trade and urban life typical of Harappa are clearly lacking in the later Vedic texts. Almost all the leading scholars of the history of Sanskrit literature hold that the later Vedic period started after 1000 BC. Since the mature Harappan culture ends around 1600 BC, it cannot be attributed to the later Vedic people.

Summing Up

The elements we have analysed above are considered the markers of the Indo-European or the Aryan culture. But their use shows temporal and spatial differences. The domestic horse appears in the region of the Black Sea and the Volga in the sixth millennium BC. The wheels and cheekpieces dating to the fourth millennium BC are found in the Black Sea-Caspian Sea area, though the spokes appear around 1600 BC in the Andronovo culture in the Volga area. Animal sacrifice is as old as the fifth millennium BC, but horse sacrifice does not date earlier than the second millennium BC and is confined to India. Male dominance appears in northern Europe and the Caucasus area in the fourth millennium BC. Clear evidence of cremation practised by the horse-users is not found earlier than *c*. 1500 BC, although the practice itself was as old as the fifth millennium BC in Kazakastan. The cults of *soma* and fire also appear among the horse-users around 1500 BC. But the earliest inscriptional use of the Proto-Indo-Aryan language is found in western Asia around 2300-2100 BC. Therefore, our reconstruction of the picture of the "Aryan' culture cannot be much earlier than *c*. 2000 BC.

Some cultural traits are common to the speakers of both the branches of the Indo-European language. Both groups used the hose to draw chariots, to ride and for other purpose. Cremation also seems to have been practised by both branches Indo-Europeans and curiously enough, even some members of the western branch performed the horse sacrifice. Mate dominance is shared by both branches. Although the forced killing of a woman to be tailed with her husband first appeared in Poland and the Baltic states in the fourth millennium BC, it became typical of the Scythians and was later confined to India. However, the cults of fire and *soma* together with the sacrifice of of animals distinguished the Indians and Iranians, while cremation and horse sacrifice were more typical of the Indians.

Several of these elements appear to have been borrowed from non-Indo-Europeans. The term *ārya* itself seems to have been adopted in the eastern branch of die Indo-European language and suitable grammatical rules framed to accommodate it in various forms. Again, cremation probably came from

eastern Europe and Central Asia and the cults of fire and *soma* seem to have been taken from some Central Asian peoples. The spoked wheel may have been donated by Mesopotamia. However, all these elements were finally unified through the dominance of the horse-based chiefs and the force of communication generated by a single language or its closely connected dialects. The priests may have used the Indo-European language to help coalesce the rituals taken from different sources. The language may have facilitated inter-tribal communication and promoted technological exchange. Gradually the group of horse-users developed a synthesis of original and borrowed elements and formed an almost autonomous culture in Central Asia by *c*. 2000 BC.

Evidence for the existence of the Aryan culture is gathered primarily from the *Ṛg Veda* and *Avesta*. The social and religious practices found in both texts are taken to reflect the common culture of the Aryans in the Andronovo context. West Asian inscriptions of 2300 BC to 600 BC confirm and supplement the data we have examined above on the horse and on socio-religious practices. Archaeology largely corroborates evidence suggested by the linguistic data of the second millennium BC. Although it is difficult to determine the route taken by successive bands of horse-users, it appears that the Indo-European culture assumed an eastern flavour in Central Asia by *c*. 2500 BC and underwent further alterations in Iran, Afghanistan and the Indian subcontinent in the succeeding centuries.

Bibliography

Agrawal, D.P. *The Archaeology of India*, Select Book Service Syndicate, New Delhi, 1984.

Aitreya Brāhmaṇa with the Commentary of Sayana, ed. T. Weber, Bonn, 1879. Tr. Martin Haug, Bombay, 1863. Tr. as *Ṛg Veda Brāhmaṇas; Aitreya* and *Kausītaki Brāhmaṇas* by A.B. Keith, Harvard Oriental Series, XXV, Harvard, 1920.

Allchin, Bridget and Raymond, *The Rise cf Civilization in India and Pakistan,* Select Bode Service Syndicate, New Delhi, 1983.

Anthony, David W. The "Kurgan Culture", Indo-European origins, and the domestication of the horse: A reconsideration', in *Current Anthropology,* 27, No. 4, Aug-Oct 1986, pp. 291-313.

Āpastamba Dharmasūtra, ed. G. Būhler, Government Central Book Depot, Bombay, 1982-94.

Atharva Veda Saṃhitā (School of the Śaunakas), ed. C.R. Lanman, tr. W. D. Whitney, Harvard Oriental Series, VII-VIII, Harvard University, Harvard, 1905.

Bailey, H.W. 'Iranian *arya* and *daha',* in *Transactions of the Philological Society,* 1959, pp. 71-83.

Basham, A.L *The Origins and development of Classical Hinduism,* Oxford University Preaa, New Delhi, 1990.

Benveniste, E. *Indo-European Language and Society,* Faber and Faber, London, 1973.

Bongard-Levin, G.M. *The Origin of Aryans From Scythis to India,* Arnold-Heinemann, New Delhi, 1980.

Burrow, T. *The Sanskrit Language,* Faber and Faber, London, 1955.

The Proto-lndoaryans', in *Journal of the Royal Asiatic Society,* 1973, pp. 123-40.

Buck, Carl D. A *Dictionary of Selected Synonymt in the Principal Indo-European Languages,* University of Chicago Press, Chicago, 1949.

The Cambridge Ancient History, Vol. I, port 1, 3rd edn, ed. I.E.S. Edwards, C.J. Gadd and N.G.L Hammond, Cambridge University Press, Cambridge, 1970; Part II, 1971.

Cardona, G., H. M. Hoeningswald and A. Senn, eds, *Indo-European and Indo-Europeans,* Pennsylvania Press, Philadelphia, 1970.

Childe, V.G. *The Aryans: A Study of Indo-European Origins,* Kegan Paul, Trench and Trubner, London, 1926.

Dani, A.H. *Recent Archaeological Discoveries in Pakistan,* UNESCO and The Centre for East Asian Cultural Studies, Tokyo, 1988.

Dani, A.H. and V.M. Masson, *History cf Civilizations in Centred Asia,* I, UNESCO Publishing, Paris,

1992.

Deva, K. and Vijayakanta Mishra, *Vaishali Excavations: 1950,* Vaishali Sangha, Vaishali, 1961.

Diakonov, I.M. 'On the original home of the speakers of Indo-European', in *Journal of Indo-European Studies* (abbrev. *JIES),* 13, 1985, pp. 92-201.

Fairservis Jr., Walter, A. *The Roots of Ancient India,* George Allan and Unwin, London, 1971.

Francfort, Henry-Paul 'New data illustrating the early contacts between Central Asia and the north-west of the Subcontinent, in *South Asian Archaeology 1969,* ed. C. Jarrige, Prehistory Press, Madison, 1992, pp. 97-102.

Gaur, HG *Excavation at Atranjikhera. Early Civilisation if the Upper Ganga Basin.* Motilal Banarasidass, Delhi, 1983.

Gening, V.J. 'The cemetery at Sintashta and the early Indo-Iranian peoples', in *JIES,* 7,1979, pp. 1-29.

Ghosh, A. 'Rajgir 1950', in *Ancient India, No.* 7, January 1951, pp. 66-78.

Ghosh, A. ed. *An Encyclopaedia of Indian Archaeology* (abbrev. *EIA*), in 2 Vols, Munshiram Manoharlal, New Delhi, 1989.

Gimbutas, Marija *Bronze Age Cultures in Central and Eastern Europe,* Mouton, The Hague, 1965.

The Kurgan wave 2 (*c.* 3400-3200 BC) into Europe and the following transformation of culture', in *JIES,* 8, Nos. 3 and 4,1980, pp. 273-315.

'Comments' on David W. Anthony, The "Kurgan culture", Indo-European origin and the domestication of the horse: A reconsideration', in *Current Anthropology,* 27, No. 4, Aug-Oct 1986.

The social structure of old Europe', in *JIES,* 18, Nos. 3-4,1990, pp. 225-284.

Gnoli, Gherardo *The Idea of Iran: An essay on* its *origin,* Institute ltaliano per 11 Medio Ed Estremo Oriente, Rome, 1989.

Gurney, O.R. *The* Hittites, Allen Lane, London, 1975.

Habib, Irfan and Faiz Habib, 'The Historical Geography of India, 1800-800 BC', in *Proceedings of the Indian History Congress,* 52nd Session, K.M. Shrimali, Secretary, Indian History Congress, Department of History, University of Delhi, New Delhi, 1991-92, pp. 72-97.

Indian Archaeology-A Review, (abbrev. *IAR), 1984-85, 1985-86, 1986-87, 1987-88* and *1988-89,* Archaeological Survey of India, Government of India, New Delhi.

Hansen, LJ. 'Death and the Indo-Europeans: Some traditions', in *JIES,* 8, Nos. 1-2,1980, pp. 31-40.

Hunter, William A. *Introduction to Roman Law,* London, 1934.

The Iliad of Homer, tr. E V. Rieu, reprint, Penguin, Harmondsworth, 1986.

Joshi, J.P. *Excavation at Bhagwanpura 1975-76,*
Archaeological Survey of India, Government of India, New Delhi, 1993.

Excavation at Surhotada and Exploration in Kutch, Memoirs of the Archaeological Survey of India, No. 87, Archaeological Survey of India, Government of India, New Delhi, 1990.

Kane, P.V. *History of Dharmaśāstra,* Vol. II, pt. 2, Bhandarkar Oriental Research Institute, Poona,

1974.

Lal, B.B. 'Some reflections on the structural remains at Kalibanga', in B.B. Lal and S.P. Gupta eds, *Frontiers of the Indus Civilization,* Books and Books, New Delhi, 1984, pp. 55-62.

'The Painted Gray Ware culture of the Iron Age', in A.H. Dani and V.M. Masson, *History of Civilizations in Central Asia,* UNESCO Publishing, Paris, 1992, pp. 421-440.

Lincoln, Bruce *Priests, Warriors and Cattle,* University of California Press, Berkeley and Los Angeles, 1982.

Macdonell, A. A. and A.B.Keith, *Vedic Index of Names and Subjects,* Vols. I and II, Indian Text Series, London, 1922, reprint, Motilal Banarasidass, Delhi, 1967.

Mallory, J.P. In *Search of the Indo-Europeans Language, Archaeology and Myth,* Thanes and Hudson, paperback edn, London, 1991.

Manu *Smṛti or Mānava Dharmaśāstra,* ed. V. N. Mandlik, Ganpat Krishnaji's Press, Bombay, 1886.

Marshall, Sir, John, ed. *Mohenjo-daro and the Indus Civilization*, 3 Volumes, Arthur Probsthain, 41 Great Russel Street, London, 1931.

Monier-Williams, M. A *Sanskrit-English Dictionary,* Oxford University Press, reprint, Motilal Banarsidass, Delhi, 1986.

Narain, AK. 'On the first Indo-Europeans: The Tokharian-Yuezhi and their Chinese homeland', in *Inner Asia,* No. 2, Indian University Research Institute for Innier Asian Studies, Bloomington, 1987.

Narain, A.K. and T.N. Roy, *Excavations at Rajghat,* part II, Banaras Hindu University, Varanasi, 1977.

Narain, A.K. and T-N. Roy, *The Excavations at . Prahladpur (March-April 1963),* Banaras Hindu University, Varanasi, 1968.

The Odyssey of Homer, tr. EV. Rieu, reprint, Penguin, Harmondsworth, 1986.

Parpola, A. The coming of the Aryans to Iran and India and the cultural and ethnic identity of the dāsas', in *International Journal of Dravidian Linguistics,* XVII, No. 2, pp. 85-228.

Poliakov, L. *The Aryan Myth: A history of racist and nationalist ideas in Europe,* tr. Edmund Howard, Chatto Heinemann for Sussex University Press, London, 1974.

Possehl, G.L. and Paul C Rissman, 'India' in *Chronologies in Old World Archaeology,* third edn, ed. Robert W. Ehrich, The University of Chicago Press, 1992.

Rao, S.R *Lothal and the Indus Civilization,* Asia Publishing House, Bombay, 1973.

Lothal A Harappan port town (1955-62), Memoirs of the Archaeological Survey of India, No. 78, Archaeological Survey of India, Government of India, New Delhi, Vol. I, 1979. Vol. II, 1985.

Renfrew, C. *Archaeology and* Language: *The puzzle of Indo-European origins,* Penguin, Harmondsworth, 1989.

Renou, L. *Vedic India,* Indological Book Hpuse, Varanasi, 1971.

Ṛg Veda Saṃhita with the commentary of Soyana, 5 Vols, Vaidik Samshodhan Mandal, Poona, 1933-35. Tr. of the first six Mandalas, H.H. Wilson, London, 1850-57. Tr. under the tide The *Hymns of*

the Ṛg Veda by Ralph T.H. Griffith, reprint, Motilal Banarasdass. Tr. in German, K.F. Geldner, Delhi, 1986, *Der Rig-Veda,* HOS, XXXIII-XXXVI, Cambridge, Massachusetts, 1951-57.

Roux, G. *Ancient Iraq,* second edn, Penguin, Harmondsworth, 1980.

Sankalia, H.D. *The Prehistory and Protohistory of India and Pakistan,* (abbrev. *PPIP*), new edn, Dec can College Postgraduate and Research Institute, Poona, 1974.

Śatapatha Brāhmaṇa (Madhyandina recension), ed. V. Sharma Gauda and C.D. Sharma, Kasi, Samvat 1994-97, tr. J. Eggeling, *Sacred Books of the East* Series, (abbrev. *SBE),* XII, XXVI, XLI, XUII and XLIV, reprint, Motilal Banarasidass, Delhi, 1963.

Shaffer, J.G. Indus Valley, Baluchistan and the Helmand', in *Chronologies in Old World Archaeology,* third edn, ed. Robert W.Ehrich, Vol. I, The University of Chicago Press, Chicago and London, 1992.

Sharma, R.S. *Perspectives in Social and Economic History of Early India,* Munshiram Manoharlal, Delhi, 1983.

Material Culture and Social Formations in Ancient India, Macmillan, Delhi, 1992.

Origin of the State in India, University of Bombay, Bombay, 1989.

Sudras in Ancient India, third edn, Motilal Banarasidass, Delhi, 1990.

Aspects of Political Ideas and Institutions in Ancient India, third edn, Motilal Banarasidass, Delhi, 1991.

Sherratt, A. 'Plough and Pastoralism: Aspects of the secondary products revolution', in I. Hodder, G. Isaac and N. Hammond, eds, *Pattern of the Past: Studies in Honour of David Clarke,* Cambridge University Press, Cambridge, 1981, pp. 261-305.

Sherratt, Andrew and Susan Sherratt, 'The archaeology of Indo-European: An alternative view', in *Antiquity, 62,* No. 236,1988, pp. 584-95.

Singh, P. and M. Lal, 'Narhan: 1983-85, A Preliminary Report of Archaeological Excavations', in *Bharati,* NS, No. 3,1985, pp. 120-21.

Singh, P. *Excavations* at *Nathan (1984-89),* Banaras Hindu University and D.K. Publishers, New Delhi, 1994.

Sinha, B.P. and B.S.Verma, *Sonpur Excavations (1956 and 1959-62),* Directorate of Archaeology and Museums, Bihar, Patna, 1977.

Sinha, B.P. and S.R. Roy, *Vaishali Excavations 1958-62,* Directorate of Archaeology and Museums, Bihar, Patna, 1969.

Sinha, B.P. and LA. Narain, *Pataliputra Excavations,* Directorate of Archaeology and Museums, Bihar, Patna, 1970.

Smith, Morton R. 'What is in a name (in ancient India)?', in *JIES,* 12,1984.

Stacul, G. 'Cremation graves in northwest Pakistan and their Eurasian connections: Remarks and hypotheses', in *East and West,* ISMEO, Rome, New Series, 21, Nos. 1-2 (March-June 1971), pp. 9-19.

Prehistoric and Protchistoric Swat, Pakistan (c. 3000-1400 BC), ISMEO, Rome, 1987.

Swat, Pirak, and connected problems (mid-2nd millennium BC)' in *South Asian Archaeology 1969,* ed. Catherine Jarrige, Prehistory Press, Madison, 1992, pp. 267-270.

Thapar, B.K. Synthesis of the multiple data as obtained from Kalibangan', in D.P. Agrawal and A. Ghosh, ed. *Radiocarbon and Indian Archaeology,* Tata Institute of Fundamental Research, Bombay, 1973, pp. 264-71.

Tripathi, Vibha 'Early historic archaeology and radiocarbon dating, in The *Indian Historical* Review, XIV, Nos. 1-2,1987, pp. 20-35.

Turner, RL *A Comparative Dictionary of the Indo-Aryan Languages,* Oxford University Press, London, 1966.

Vats, M.S. *Excavations at Harappa,* 2 Vols, Government of India, Delhi, 1940.

Voigt, M. and RH. Dyson, Iran' in *Chronologies* in *Old World Archaeology,* third edn, ed. Robert W. Ehrich, Vol. I, The University of Chicago Press, Chicago and London, 1992.

The Zend Avesta, Pt 1, *The Vendidad,* tr. James Darmesteter, *SME,* Vol. IV, reprint. Part II, tr. James Darmesteter, SBE, Vol. XXIII, reprint, Motilal Banarasidass, Delhi, 1988. Pt III, tr. LH. Mills, SBE, XXXI, reprint, Motilal Banarasidass, Delhi, 1988.

Zvelebil Marek and Kamil V. 'Agricultural transition and Indo-European dispersals', *inAntiquity,* 62, No. 236, Sept. 1988, pp. 574-583.

Cameos in History and Culture

This new series launched by **Orient Blackswan,** brings to you short, focussed, carefully written books on significant persons, places, events and processes, both past and present, from India and other parts of the world.

Each ***Cameo*** is on a topic of perennial interest within the broad fields of history, archaeology, anthropology and culture. The language is simple, free of jargon, yet lucid and precise. Concepts are* dealt with such that they are accessible to every one.

Cameos invite people to learn more about subjects that are of interest to them in a manner that is exciting. These are well researched books, written by specialists.

Cameos from **Orient Blackswan** are available at all leading bookshops.

Notes and References

Notes to Chapter 1

1. Most of these terms are used by T. Burrow, Marija Gimbutas,J.P. Mallory, Asko Parpola, Colin Renfrew and others.

2. Cited in J.P. Mallory, *In Search of the Indo-Europeans*, Thames and Hudson, London, 1991, p. 276, fn. 27.

3. Asko Parpola, 'The coming of the Aryans to Iran and India and the cultural and ethnic identity of the dasas', in *International Journal of Dravidian Linguistics*, XVII, No. 2, p. 116 with fn. 163.

4. Ibid., p. 123 with fn. 203.

5. *Ṛg Veda Saṃhita* (abbrev. *Ṛg Veda),* with commentary by Sayana, 5 Vols, Vaidik Samshodhan Mandal, Poona, 1933-35. Tr. of the first six mandalas, H.H. Wilson, London, 1850-57. Tr. under the title, *Hymns of the Ṛg Veda* by Ralph T.H. Griffith, reprint, Motilal Banarasidass, Delhi, 1986. VII.5.2-3.

6. Ibid., IX.41.1-2.

7. Ibid., IX. 73.5

8. Ibid., I.130.8

9. H. W. Bailey, 'Iranian A*rya* and *Daha*', in *Transactions of the Philological Society*, 1959, pp. 71-83.

10. Emile Benveniste, *Indo-European Language and Society*, Faber and Faber, London, 1973.

11. Colin Renfrew, *Archaeology and Language: The puzzle of Indo-European origins*, Penguin, Harmondsworth, 1989.

12. Black-grey burnished ware appears in all the occupation phases of all the settlements of the Swat valley. It is affiliated with ware from north Iran that spread from 2500 BC onwards. Several ware types of the valley can be compared with those from Dashly in north Afghanistan which includes grey burnished ware. Dashly pottery has affinities with those from Shah Tepe, Tepe Hissar and Tureng Tepe. Giorgio Stacul, *Prehistoric and Protohistoric Swat, Pakistan,* (*c*. 3000-1400 *BC*), Rome, ISMEO, 1987, p. 122.

13. Mallory, *In Search of the Indo-Europeans*, pp. 162, 164, 182, 244-50.

Notes to Chapter 2

1. R. Morton Smith, 'What is in a name (in ancient India)?', in *Journal of Indo-European Studies* (abbrev. *JIES*), 12, 1984, p. 306.

2. *Ṛg Veda,* I.162-63.

3. A. A. Macdonell and A. B. Keith, *Vedic Index of Names and Subjects,* Motilal Banarasidass, Delhi, reprint, 1967, pp. 42-43.

4. *The Iliad,* tr. E.V. Rieu, Penguin, Harmondsworth, reprint, 1986, (Bk XXIII), pp. 412-419.

5. *The Odyssey,* tr. E.V.Rieu, Penguin, Harmondsworth, reprint, 1986, (Bk VIII) p. 125.

6. *Sacred Books of the East* (abbrev. *SBE*), XXIII, *The Zend Avesta,* tr. J. Darmesteter, pt 2, Motilal Banarasi dass, Delhi, reprint, 1988, pp. 136, 138, 152,157.

7. Ibid., pp. 142, 350-51; XXXI, pp. 256, 271.

8. Ibid., XXI, p 219.

[9] Ibid., XXIII, p. 328, 340.

[10] Ibid., pp. 324-29; cf. XXXI, pp. 235, 247 with fn. 49, p. 250.

[11] *SBE*, IV, *The Zend Avesta,* pt I, Introduction, p. XCVI, p. 31.

[12] Ibid., XXXI, pp. 120,173-74.

[13] Ibid., pp. 173, 199, 204, 216, 270-71, 276.

[14] Ibid., XXIII, pp. 136, 138.

[15] Ibid., p. 124 with fn. 3.

[16] *An Encyclopaedia of Indian Archaeology*, (abbrev. *EIA*), ed. A. Ghosh, Munshiram Manoharlal, Delhi, 1989, Vol. I, p. 4.

[17] Ibid., pp. 39-41; H.D. Sankalia, *The Prehistory of India and Pakistan*, (abbrev. *PPIP*), new edn, Deccan College Postgraduate and Research Institute, Poona, 1974, pp. 271-72. It is curious that on p. 4 of *EIA*, I, G.L Badam mentions the presence of the domesticated horse at Bagor but on p. 314, ibid., he does not include it in the list of Bagor animals. Cf. Gregory L. Possehl and Paul C. Rissman, 'India' in *Chronologies in Old World Archaeology*, third edn, ed. R.W. Ehrich, Vol. I, The University of Chicago Press, Chicago, 1992, p. 475.

[18] G.R. Sharma, V.D. Mishra, D. Mandal, B.B. Mishra and J.N. Pal, *Beginnings of Agriculture,* Abinash Prakashan, Allahabad, 1990, pp. 220-221 with fn. on p. 221.

[19] *EIA*, I, p. 76.

[20] Allchin's view quoted in H.D. Sankalia, *PPIP*, p. 325.

[21] EIA, I, p. 362.

[22] Ibid., p. 282.

[23] Ibid., and H.D. Sankalia, *PPIP*, p. 323.

[24] *EIA*, I, p. 338.

[25] 'Comments' by Marija Gimbutas on David A. Anthony, 'The "Kurgan culture", Indo-European origins, and the domestication of the horse: A reconsideration', in *Current Anthropology*, Vol. 27, No. 4, Aug-Oct. 1986, p. 306; G. Matyushin, 1986, quoted in M. Zvelebil and K.V. Zvelebil, 'Agricultural transition and Indo-European dispersals', in *Antiquity*, Vol. 62, No. 236, Sept. 1988, p. 581.

[26] Marija Gimbutas, *Current Anthropology*, Vol. 27, No. 4, Aug-Oct. 1986, p. 306.

[27] I.M. Diakonov, 'On the original home of the speakers of Indo-European', in *The Journal of Indo-European Studies*, Vol. 13,1985, p. 168, fn. 29.

[28] A.H. Dani and V. M.Masson, ed. *History of Civilizations in Central Asia*, 1, UNESCO, Paris, 1992, p. 191.

[29] Ibid., p. 217.

[30] R.S. Sharma, *Aspects of Political Ideas and Institutions in Ancient India,* 3rd edn, Motilal Banarasidass, Delhi, 1991, pp. 165-66.

[31] *The Iliad*, Bk XXIII, pp. 419-21.

[32] Mallory, *In Search of the Indo-Europeans,* p. 274, fn. 20.1, pp. 275-76, fn. 25.

[33] Ibid., pp. 274-75, fn. 25.

[34] Dani and Masson, ed. *History of Civilizations*, p. 347.

[35] Parpola, 'The coming of the Aryans', p. 143.

[36] Dani and Masson, ed. *History of Civilizations*, p. 347.

[37] J.H. Crouwel and M.A. Littauer quoted in Mallory, *In Search of the Indo-Europeans*, p. 41.

[38] Ibid.

[39] Parpola, 'The coming of the Aryans', p. 143; cf. Henri-Paul Francfort, 'New data illustrating the early contacts between Central Asia and the northwest of the Subcontinent', in *South Asian Archaeology 1989*, ed. Catherine Jarrige, Prehistory Press, Madison, 1992, p. 99.

[40] Parpola, 'The coming of the Aryans', p. 150.

[41] Richard Meadow, 'Continuity and change in the agriculture of the Great Indus Valley: The palaeoethnobotanical and zooarchaeological evidence', in *Old Problems and New Perspectives in the Archaeology of South Asia*, ed. J.M. Kenoyer, University of Wisconsin, 1989, p. 70 quoted by G. Stacul in *South Asian Archaeology 1989*, p. 268; cf. Jim G. Shaffer, 'Indus Valley, Baluchistan and the Helmand', in *Chronologies in Old World Archaeology*, ed. R.W. Ehrich, Vol. 1,1992, p. 459.

[42] A.H. Dani, *Recent Archaeological Discoveries in Pakistan*, UNESCO and The Centre for East Asian Cultural Studies, Tokyo, 1988, p. 63.

[43] Sankalia, *PPIP*, p. 330.

[44] Parpola, 'The coming of the Aryans', pp. 145,159.

[45] Mallory, *In Search of the Indo-Europeans*, p. 47.

[46] Parpola, 'The coming of the Aryans', p. 155.

[47] Cf. Georgio Stacul, 'Swat, Pirak and connected problems (mid-2nd millennium BC)', in *South Asian Archaeology 1989*, ed. Catherine Jarrige, Prehistory Press, Madison, 1992, pp. 267-70.

[48] EM, II, p. 424.

[49] Information from M.K. Dhavalikar on the basis of his recent excavation.

[50] *EIA*, I, p. 4; II, p. 274.

[51] S.R. Rao, *Lothal: A Harappan port town,* Memoirs of the Archaeological Survey of India, No. 78, Archaeological Survey of India, New Delhi, 1979, p. 219.

[52] Information from Richard Meadow and R.S. Bhisht.

[53] Rao, *Lothal*, p. 219.

[54] *EIA*, I, p. 90.

[55] *EIA*, II, p. 64.

[56] Ibid., p. 164.

[57] *EIA*, I, pp. 107-108.

[58] Ibid., p. 337.

[59] Ibid.

[60] Information from A.K. Patel of the Archaeological Survey of India.

[61] Ibid., II, p. 64; J.P. Joshi, *Excavation at Bhagwanpura 1975-76,* Archaeological Survey of India, New Delhi, 1993, pp. 29,144,147.

[62] *EIA,* II, p. 164.

[63] R.C. Gaur, *Excavations at Atranjikhera. Early Civilization of the Upper Canga Basin,* Motilal Banarasidass, Delhi, 1983, p. 462.

64. *EIA*, I, pp. 108,338.

65. Ibid., p. 338.

66. *Ancient India,* Nos. 10-11 (1954-55), p. 86, plate 42. fig. 3.

67. R.C. Gaur, *Excavations at Atranjikhera*, pp. 366-69.

68. EIA, I, p. 339.

69. *Indian Archaeology-A Review* (abbrev. *IAR*), *1988-89,* Archaeological Survey of India, New Delhi, pp. 88.

70. U.C. Chattopadhyaya, 'Report on faunal remains in Narhan', in Purshottam Singh, *Excavations at Narhan (1984-89),* Banaras Hindu University and D. K. Publishers, New Delhi, 1994, pp. 251-52; cf. JAR *1984-85*, p. 90; *IAR 1985-86*, p. 123. Purshottam Singh and Makkhan Lal, 'Narhan: 1983-85 -A preliminary report of archaeological excavations', in *Bharati,* NS, No. 3,1985, pp. 120-21. For the date of Narhan Period I, see *IAR 1988-89*, p. 110.

71. *IAR 1984-85,* pp. 90-91.

72. *IAR 1985-86*, p. 123.

73. *IAR 1984-85,* p. 92.

74. Information from B.P. Singh on the basis of the 'Register of Antiquities'.

75. A.K. Narain and T.N. Roy, *Excavations at Rajghat,* part II, Banaras Hindu University, Varanasi, 1977, pp. 8-9.

76. A.K. Narain and T.N. Roy, *The Excavations at Prahladpur (March-April 1963),* Banaras Hindu University, Varanasi, 1968, pp. 13,45-46.

77. Narain and Roy, *Excavations at Rajghat*, part II, pp. 8-9.

78. *EIA,* II, p. 89.

79. Krishna Deva and V. Mishra, *Vaishali Excavation: 1950*, Vaishali Sangha, Vaishali, 1961, p. 56; B.P. Sinha and S.R. Roy, *Vaishali Excavations, 1958-62,* Directorate of Archaeology and Museums, Patna, 1969, p. 160.

80. Information from B.S. Verma.

81. B.P. Sinha and B.S. Verma, *Sonpur Excavations, (1956 and 1959-62),* Directorate of Archaeology and Museums, Patna, 1977, pp. 100,119.

82. B.P. Sinha and LA. Narain, *Pataliputra Excavations, 1955-56,* Directorate of Archaeology and Museums, Patna, 1970, pp. 43-44.

83. *IAR, 1971-72,* p. 5 and pl. XI B.

84. Ibid.

85. Sinha and Narain, *Pataliputra Excavations,* 1955-56, p. 10.

86. *EIA,* I, p. 136.

87. *Śatapatha Brāhmaṇa,* v. 3.3.3. (Madhyandina recension), ed. V. Sharma Gauda and C.D. Sharma, Kasi, Samvat 1994-97. Tr. J. Eggeling, *SBE,* XII, XXVI, XLI, XLIII and XLIV, reprint, Motilal Banarasidass, Delhi, 1963.

88. *EIA*, I, p. 337.

89. Ibid.

90. Information from A.K. Prasad.

91. Information from B.S. Verma.

[92] *EIA*, I, p. 336.

[93] Gaur, *Excavations at Atranjikhera*, p. 374.

[94] Sinha and Verma, *Sonpur Excavations*, pp. 123-125.

[95] Sinha and Narain, *Pataliputra Excavations, 1955-56*, p. 47.

[96] Sinha and Roy, *Vaishali Excavations*, pp. 202-203.

[97] Information from B.S. Verma.

[98] Sinha and Verma, *Sonpur Excavations*, pp. 124-25.

[99] *IAR* J985-86, p. 8.

[100] Sinha and Verma, *Sonpur Excavations*, p. 95.

[101] M.A. littauer and J.H. Groutrel, *Wheeled Vehicles and Ridden Animals in the Ancient Near East*, E.J. Brill, Leiden, 1979, quoted in Henri-Paul Francfort, 'New data illustrating the early contacts between Central Asia and the north-west of the Subcontinent', in *South Asian Archaeology 1989*, ed. C. Jarrige, Prehistory Press, Madison, 1992, pp. 97-102.

[102] David W. Anthony, The "Kurgan culture", Indo-European origins, and the domestication of the horse: A reconsideration', in *Current Anthropology*, Vol. 27, No. 4, Aug-Oct 1986, pp. 291-313.

Notes to Chapter 3

[1] *The Cambridge Ancient History*, Vol. I, pt. II, 3rd edn, ed. I.E.S. Edwards et al., Cambridge University Press, Cambridge, 1971, p. 831.

[2] Ibid., p. 836.

[3] *Cambridge Ancient History,* Vol. I, pt I, 3rd edn, pp. 140-44; *takṣan* (carpenter) is also used, pt. II, p. 833; Mallory, *In Search of the Indo-Europeans,* pp. 24-30.

[4] J. Harmatta 'The emergence of the Indo-Iranians: the Indo-Iranian languages', in *History of Civilizations,* I, ed. Dani and Masson, p. 374.

[5] *The Iliad,* Bk XXIII, p. 417.

[6] Georges Roux, *Ancient Iraq,* second edn, Penguin, Harmondsworth, 1980, pp. 227-28.

[7] Ibid., p. 230.

[8] Ibid., pp. 217-18; Mallory, *In Search of the Indo-Europeans,* pp. 37-43.

[9] T. Burrow, The Proto-Indoaryans', in *Journal of the Royal Asiatic Society,* 1973, pp. 123-40.

[10] Mallory, *In Search of the Indo-Europeans,* pp. 37-38.

[11] Ibid., pp. 30-33.

[12] Georges Roux, *Ancient Iraq,* p. 258.

[13] sub *voce, 'muṣaka',* Monier-Williams, Sanskrit-English Dictionary.

[14] Mallory, *In Search of the Indo-Europeans,* p. 39.

[15] Burrow, The Proto-lndoaryans', pp. 133, 139-40.

Notes to Chapter 4

[1] Mallory, *In Search of the Indo-Europeans,* pp. 135-38.

[2] Benveniste, *Indo-European Language and Society,* pp. 482, 484, 486.

[3] Bruce Lincoln, *Priests, Warriors and Cattle,* University of California Press, Berkeley and Los Angeles, 1982, pp. 65-66.

[4] *The Iliad,* Bk XXIII, 416; cf. *The Odyssey,* Bk XI, p. 172.

[5] Lincoln, *Priests, Warriors and Cattle,* Chapter IV. 18.

[6] Mallory, *In Search of the Indo-Europeans,* p. 198.

[7] Ibid., pp. 203-04.

[8] Ibid., pp. 214-215.

[9] *SBE*, XXIII, *The Zend Avesta,* pt 2, pp. 62-63, 79; cf. SBE, XXXI, p. 120 with fn. 1, pp. 213-14.

[10] *SBE*, IV, pp. 232-33.

[11] Ibid., Vol. XLIV and *Śatapatha Brāhmaṇa,* pt 5, p. 517.

[12] Rao, *Lothal*, p. 218.

[13] *Śatapatha Brāhmaṇa,* XIII. 1-5.

[14] *The Iliad*, Bk XXIII, p. 417.

[15] Mallory, *In Search of the Indo-Europeans,* p. 136.

[16] Ibid.

[17] L. Renou, *Vedic India*, Indological Book House, Varanasi, 1971, pp. 109, 136.

[18] Mallory, *In Search of the Indo-Europeans*, p. 220.

[19] Ibid.

[20] Ibid., p. 221.

[21] V.J. Gening, 'The cemetery at Sintashta and the early Indo-Iranian peoples', in *The Journal of Indo-European Studies*, VII, 1979, p. 21.

[22] Sankalia, *PPIP*, 1974, p. 350.

[23] Rao, *Lothal,* pp. 216-17.

[24] Ibid., pp. 96-98; 20-21, 216-17.

[25] Ibid., p. 216.

[26] Ibid., pp. 97-98, fig. 15.

[27] P.V. Kane, *History of Dharmaśāstra,* Vol. II, pt. 2, Bhandarkar Oriental Research Institute, Poona, 1974, p. 989.

[28] One *prakrama* is equal to two or three *padas,* and one *pada* consists of 12,15 *aṅgulas.* Ibid., fn. 2239.

[29] Rao, *Lothal,* p. 217.

[30] Ibid., p. 39.

[31] B.B. Lal, 'Some reflections on the structural remains at Kalibanga', in B.B. Lal and S.P. Gupta eds, *Frontiers of the Indus Civilization*,

Books and Books, New Delhi, 1984, p. 57.

32. Ibid.

33. B.K. Thapar, 'Synthesis of the multiple data as obtained from Kalibangan', in D.P. Agrawal and A. Ghosh, ed, *Radiocarbon and Indian Archaeology*, Tata Institute of Fundamental Research, Bombay, 1973, p. 273.

34. The uncalibrated radiocarbon date for the end of the Kalibangan settlement is 1665-110 BC.

35. Bridget and Raymond Allchin, *The Rise of Civilization in India and Pakistan*, Select Book Service Syndicate, New Delhi, 1983, p. 303.

36. *EIA,* I, p. 188.

37. Mallory, *In Search of the Indo-Europeans*, p. 214.

38. Ibid., p. 53. In ancient times round or rectangular ovens were widely prevalent.

39. *Śatapatha Brāhmaṇa*, XIII.8.1.5.

40. Parpola, 'The coming of the Aryans', p. 152.

41. Ibid., pp. 146-47.

42. Ibid., pp. 151-52.

43. Ibid., p. 151.

44. *EIA*, II, p. 26.

45. V. Tripathi, 'Early historic archaeology and radiocarbon dating', in The *Indian Historical Review,* Vol. XIV, 1987, Nos 1-2, p. 27.

46. *EIA,* II, p. 26.

47. Ibid., p. 298.

48. Ibid., p. 110.

49. Parpola, 'The coming of the Aryans', pp. 146-47.

50. Ibid., p. 146.

51. Ibid.

52. L J. Hansen, 'Death and the Indo-Europeans: Some traditions', in *JIES,* Vol. 8, Nos 1-2,1980, pp. 1, 39.

53. A view quoted in Giorgio Stacul, 'Cremation graves in north-west Pakistan and their Eurasian connection: Remarks and hypotheses', in *East and West,* ISMEO, Rome, NS, Vol. 21, Nos. 1-2, 1971, p. 10.

54. Information from a lecture by Richard Meadow on 27 April 1994 at the Institute of Archaeology, New Delhi.

55. Renou, *Vedic India*, pp. 118-19.

56. SBE, Vol. XXI, *The Zend* Avesta, pt. 3, tr. LH. Mills, Motilal Banarasidass, Delhi, reprint, 1988, Introduction, p. XXXI, fn. 2.

57. Ibid.

58. Marija Gimbutas, 'The social structure of old Europe', in *JIES*, Vol. 18, Nos. 3-4, p. 226 and Fig. 1 on p. 227.

59. Ibid., p. 226.

60. Dani and Masson, ed. *History of Civilizations*, I, pp. 187,189.

[61] Stacul, 'Cremation graves in north-west Pakistan', p. 12.

[62] Ibid., p. 10.

[63] Marija Gimbutas, *Bronze Age Cultures in Central and Eastern Europe*, Mouton, The Hague, 1965, p. 542.

[64] Parpola, 'The coming of the Aryans', p. 159.

[65] Ibid., p. 157.

[66] Macdonnell and Keith, *Vedic Index*, I, pp. 8-9; II, p. 175 with fn. 12.

[67] *The Iliad*, Bk XXIII, pp. 413-17.

[68] Ibid., pp. 418-19.

[69] Mallory, *In Search of the Indo-Europeans*, p. 92.

[70] Hansen, 'Death and the Indo-Europeans', p. 32.

[71] Ibid., pp. 32-33.

[72] Parpola, 'The coming of the Aryans', p. 140.

[73] Mallory, *In Search of the Indo-Europeans*, p. 47.

[74] Ibid., p. 230.

[75] Sankalia, *PPIP*, p. 330.

[76] John Marshall, *Mohenjo-daro and the Indus Civilization*, Vol. I, Arthur Probsthain, London, 1931, p. 89.

[77] Ibid., p. 79.

[78] Ibid., p. 81.

[79] M.S. Vats, *Excavations at Harappa*, I, Government of India, New Delhi, 1940, pp. 254-71, table on p. 252.

[80] Ibid., p. 253, fn.

[81] Marshall, *Mohenjo-daro*, I, p. 90.

[82] Vats, *Excavations at Harappa*, p. 251.

[83] Marshall, *Mohenjo-daro*, I, p. 79.

[84] Ibid., p. 86.

[85] Vats, *Excavations at Harappa*, I, p. 235.

[86] *EIA*, I, pp. 266, 290.

[87] Sinha and Verma, *Sonpur Excavations,* p. 8; *IAR 1968-69,* p. 5 and *EIA,* I, p. 98; Sinha and Roy, *Vaishali Excavations 1958-62,* pp. 16-22; *EIA,* II, p. 247,270,271, 365,398; A. Ghosh, 'Rajgir 1950', in *Ancient India,* No. 7, January 1951, pp. 69-70.

[88] *Ṛg Veda,* VII. 89.1, in *Ṛg Veda Saṃhita,* Vaidik Samshodhan Mandal, Poona, 1933-35; *Atharva Veda,* V. 30.14, in *Atharva Veda Saṃhita,* tr. W.D. Whitney, Harvard Oriental Series, Harvard, 1905.

[89] *Śatapatha Brāhmaṇa,* XIII. 8.1.4.

[90] *Ṛg Veda*, X. 16.4.

[91] *Atharva Veda,* XII. 2. 48.

[92] *The Iliad,* Bk XXIII, p. 417.

[93] *Āpastamba Dharmasūtra,* ed. G. Būhler, Government Central Book Depot, Bombay, 1892-94, II. 7. 16, 7.17.3; VIII. 19. 13-15.

Notes to Chapter 5

[1] Benveniste, *Indo-European Language,* pp. 175-76.

[2] W. A. Hunter, *Introduction to Roman Law,* London, 1934, p. 24.

[3] *Mam Smṛti* or *Manava Dharmasastra,* ed. V. N. Mandlik, Ganpat Krishnaji's Press, Bombay, 1886, VIII, 416.

[4] R.S. Sharma, *Perspectives in Social and Economic History of Early India*, Munshiram Manoharlal, Delhi, 1983, p. 48.

[5] Mallory, *In Search of the Indo-Europeans,* p. 244.

[6] Ibid., p. 205.

[7] Ibid., p. 230.

[8] Ibid., p. 53.

[9] Ibid., p. 250.

[10] Ibid., p. 184.

[11] Ibid., p. 93.

[12] Colin Renfrew, *Archaeology and Language: The puzzle of Indo-European origins*, Penguin, Harmondsworth, 1989, pp. 205-10.

[13] R.S. Sharma, *Material Culture and Social Formations in Ancient India*, Macmillan, New Delhi, 1992, pp. 22-55.

[14] SBE, XXXI, *The Zend Avesta*, pt III, tr. L.H. Mills, Motilal Banarasidass, Delhi, reprint, 1988, pp. 43, 49, 73,171.

[15] *sub voce, 'ayas'* Monier-Williams, *Sanskrit-English Dictionary*, Motilal Banarasidass, Delhi, 1986.

[16] Mallory, *In Search of the Indo-Europeans*, p. 121.

[17] Andrew Sherratt, 'Plough and pastoralism: Aspects of the secondary products revolution', in I. Hodder et al. eds, *Pattern of the Past: Studies in Honour of David Clarke,* Cambridge, 1981, pip. 261-305; Andrew and Susan Sherratt, 'The Archaeology of Indo-European: An alternative view', in *Antiquity,* Vol. 62, No. 236, 1988, pp. 584-95.

[18] Mallory, In *Search of the Indo-Europeans,* pp. 197-206.

[19] Ibid., pp. 198-99.

[20] Ibid., p. 199.

[21] Ibid., pp. 210-15.

[22] Alena Kuzmina quoted in Mallory, *In Search of the Indo-Europeans,* pp. 228-29.

[23] Mallory, *In Search of the Indo-Europeans,* p. 227.

Notes to Chapter 6

[1] Dani, *Ancient Pakistan,* V, 1970-71, p. 50, quoted in Sankalia, *PPIP,* p. 330.

[2] *Ṛg Veda,* X. 87. 22.

[3] *Aitreya Brāhmaṇa,* XXIII. 1-2.

[4] Harmatta in Dani and Masson, *History of Civilizations,* I, p. 373.

[5] The view of MacAlpin is quoted in Mallory, In *Search of the Indo-Europeans,* pp. 44-45.

[6] Ibid.

[7] The problem of fire altars has been discussed earlier.

[8] A.L Basham, *The Origins and Development of Classical Hinduism*, Oxford University Press, New Delhi, 1990, p. 4.

[9] This is the view of A.M. Shastri which is expressed in publications not accessible to me at present.

[10] R.S. Sharma, *Material Culture and Social Formations in Ancient India*, Delhi, Macmillan, 1992, Chapters IV and V.